

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

اختبار شهر نوفمبر



Concept 1.2

Self-Assessment | 9

till Lesson 4

1 (A) Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Digestion process	a. is the process in which excretory system collects the waste materials produced by cells and removes them from the body.
2. Urination process	b. is the process of converting the complex food into simpler substances that the body can use for energy and growth.
3. Excretion process	c. is the process of taking oxygen gas and expelling carbon dioxide gas.
	d. is the process of expelling urine outside the body.

1.

2.

3.

(B) Give a reason for the following :

Importance of respiratory system in excretion process.

.....

2 (A) Correct the underlined words :

1. Urea is formed due to the breaking down of carbohydrates inside the body cells. (.....)
2. Pancreas and gallbladder secrete their enzymes and juices inside stomach to complete the digestion of food. (.....)
3. Skeletal muscles are considered as involuntary muscles. (.....)

(B) What happens if ...?

Glycogen that is stored in liver and muscles when you are exposed to a danger situation.

.....

3 The following table shows three different systems and organs that share in the excretion process and their excretory products, Mention the name of each of them :

System / Organ	The excretory product
System (A)	Carbon dioxide
System (B)	Urine
Organ (C)	Sweat

1. System (A) represents
2. System (B) represents
3. Organ (C) represents

Self-Assessment 10 till Lesson 5**1 (A) Choose the correct answer :**

1. is an organ that doesn't contain voluntary muscles.
 a. Eye b. Heart c. Neck d. Arm
2. What is the system that transports the waste materials from the body cells to the urinary system ?
 a. Respiratory system. b. Digestive system.
 c. Nervous system. d. Circulatory system.

3. Endocrine system secretes that control the body temperature and the blood pressure.

a. hormones

b. water

c. blood

d. urea

(B) Give a reason for the following :

People whose kidneys are not working well may get harmed.

.....

2 (A) Write the scientific term of each of the following :

1. An organ which pumps the blood to all the body cells. (.....)

2. A liquid which is secreted inside the mouth during chewing of food. (.....)

3. It is the organ which transports the urine from the bladder to outside the body. (.....)

(B) What is the waste material that is produced from breaking down of proteins inside the body cells ?

.....

3 Classify the following words in the table below :

(Urea – Blood cells – Water – Proteins)

Substances pass through nephrons	Substances cannot pass through nephrons
.....	
.....	
.....	

Self-Assessment 11

till Lesson 6

1 (A) Complete the following sentences using the words below :

(digestive – insulin – musculoskeletal)

1. Researchers work to develop the artificial pancreas to pump directly inside the body of diabetics.

2. Pancreas is an organ that belongs to the system as it secretes enzymes that help in breaking down of food.

3. Bones, muscles, tendons, ligaments and cartilages belong to system.

(B) Give a reason for the following :

Some diabetics use insulin pump device.

.....

.....

2 (A) Cross out the odd word :

1. Esophagus – Heart – Stomach – Large intestine. (.....)
2. Lungs – Trachea – Diaphragm – Brain. (.....)
3. Gallbladder – Kidneys – Bladder – Urethra. (.....)

(B) What happens if ...?

Pancreas cannot secrete insulin hormone in the blood of a person.

.....

.....

3 (A) Look at the opposite figure, then complete the following diagram that explains the steps of urination process :

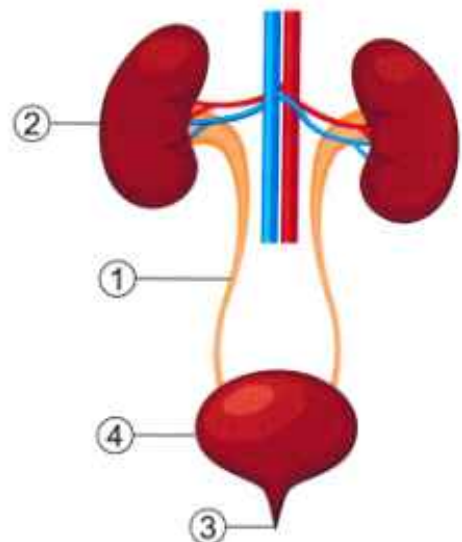
1. Blood is filtered in organ number



2. Then urine is transported to organ number by the help of organ number



3. The urine is stored in organ number until it is expelled outside the body by the help of organ number

**(B) What is the function of ...?**

Gallbladder :

SELF-ASSESSMENTS

on Concept (1.3)

Self-Assessment 12 On Lessons 1&2

1 (A) Put (✓) or (X) :

1. The best way to see the magnetic field is to allow a magnet to attract some pieces of a non-magnetic material. ()
2. All objects are held on the Earth's surface due to its gravity. ()
3. Gravity and magnetism are two forces which can be seen by human eyes. ()

(B) What happens to ...?

The gravity if the distance between an object and the center of Earth increases.

.....

2 (A) Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Magnetism	a. is a factor that affect the force of gravity.
2. Mass	b. is the force that attracts all objects toward the center of the Earth.
3. Magnetic field	c. is the force that allows the magnet to attract or repel other magnets.
4. Gravity	d. is an area in which the effect of the magnet appears.
1.	2. 3. 4.

(B) Give a reason for the following :

Both of gravity and magnetism are different from other types of forces.

.....

3 Correct the underlined words :

1. Mass and distance are the two factors that affect magnetic field. (.....)
2. Gravity is always downward pushing force. (.....)

Self-Assessment 13

 On Lessons 1&2

1 (A) Complete the following sentences :

1. The force of gravity by increasing the mass of an object.
2. Some materials don't attract to the magnet like and
3. Earth attracts all objects toward its due to its force.

(B) Give a reason for the following :

On approaching a magnet to some pieces of plastic, they do not attract to the magnet.

.....

2 (A) Put (✓) or (X) :

1. Gravity of Earth can attract all objects to its surface while magnets cannot. ()
2. Magnetism and electricity can work together. ()
3. Gravity and magnetism are similar in that they must be in contact with other objects. ()

(B) Correct the underlined words :

1. Iron and cobalt are considered non-magnetic materials. (.....)
2. The magnetic field of a magnet can be observed by using aluminum foil. (.....)

3 Using the words below to complete the following sentences :

(magnetic field – cobalt – pulling force – plastic)

1. Nickel and are magnetic materials, while copper and are non-magnetic materials.
2. The magnet is always surrounded by an area called
3. Gravity of Earth is always

Self-Assessment 14: till Lesson 3

1 (A) Choose the correct answer :

- The generator consists of and
 - large magnets – plastic tube.
 - battery – wind turbine
 - large magnets – coiled wires.
 - small magnets – battery.
- The magnetic effect around a conducting wire that has an electric current and wrapped around a metal core, is known as
 - the electric circuit.
 - the magnetic field.
 - the electric current.
 - the gravity force.
- Electricity can be generated from
 - wind force and sand.
 - water force and glass.
 - wind force and water force.
 - copper and plastic.

(B) What is the importance of?

- The electric switch :
- The battery :

2 (A) Correct the underlined words :

- Electricity is the force by which Earth attracts all objects to its surface. (.....)
- Plastic and rubber are electric conductors. (.....)
- Sound energy is changed into electrical energy in the generator. (.....)

(B) Give a reason for the following :

Copper is not considered as a magnetic material.

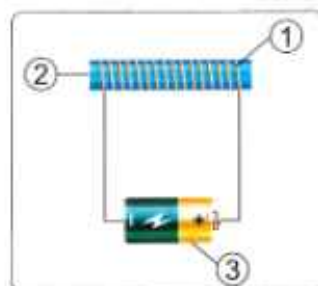
.....

.....

3 Look at the opposite figure then answer the following questions :

(a) Label the figure.

-
-
-



(b) This figure indicates that and can work together (choose).

- sound and electricity
- light and magnetism
- magnetism and electricity
- light and electricity

Self-Assessment 15

till Lesson 4

1 (A) Put (✓) or (X) :

1. Iron and plastic are used in making magnets. ()
2. Electric current can be converted into sound energy by using generators. ()
3. Cobalt, steel and nickel are magnetic materials. ()

(B) Give a reason for the following :

The battery is very important in the electric circuit.

.....

.....

2 (A) Write the scientific term of each of the following :

1. The flow of electrons in a steady stream through an electric wire. (.....)
2. The materials which are used in making the electric wires. (.....)
3. The materials that are used to cover the electric wires. (.....)

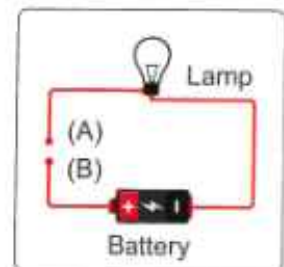
(B) Cross out the odd word :

1. Copper – Iron – Plastic – Aluminum. (.....)
2. Nickel – Cobalt – Steel – Copper. (.....)

3 Look at the opposite electric circuit then answer :

1. The lamp will light up when is used to connect points (A) and (B).

- | | |
|----------------------|--------------------|
| a. a plastic spoon | b. a piece of wood |
| c. a piece of rubber | d. an iron nail |



2. All the following can be used to connect points (A) and (B) to form a closed circuit, except

- | | |
|---------------------|----------------------|
| a. a closed switch. | b. another lamp. |
| c. another battery. | d. an opened switch. |

Self-Assessment 16 till Lesson 5

1 (A) Write the scientific term of each of the following :

1. The energy that is produced from electric generators. (.....)
2. Materials that allow electric current to flow through them easily. (.....)
3. They are components of an electric circuit that limit the flow of electric current. (.....)

(B) Correct the underlined words :

1. The internal switch on a battery is an automatic switch to adjust the temperature of a refrigerator. (.....)
2. In the parallel circuits, the electric current flows in only one path. (.....)

2 (A) Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Nickel	a. is an electric insulator used to coat the electric wires.
2. Galvanometer	b. is a magnetic material that is attracted to the magnet.
3. Plastic	c. is a non-magnetic material but it is an electric conductor.
	d. is used to detect the flow of electric currents.

1.

2.

3.

(B) What happens to ...?

The amount of generated electric current on moving a magnet rapidly inside a coil of copper wire.

.....

3 Look at the following figures then answer :

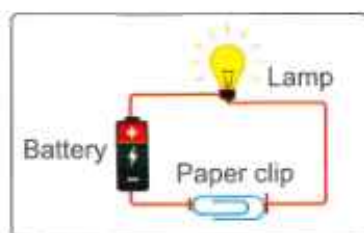


Figure (A)

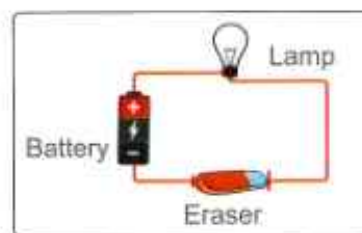


Figure (B)

(A) Choose the correct answer :

1. In figure (A), the lamp is lighting up because the paper clip is made of
(metal – plastic)
2. In figure (B), the eraser is considered as
(an electric conductor – an electric insulator)

(B) Put (✓) or (X) :

1. If the paper clip in figure (A) is replaced by a piece of rubber, the lamp still lighting up. ()
2. If the eraser in figure (B) is replaced by a galvanometer, its needle will move. ()

Self-Assessment 17 till Lesson 6**1 (A) Choose the correct answer :**

1. is an important tool that is used to make the heart of patients move regularly.
a. Magnet b. Pacemaker c. Plastic spoon d. Lamp
2. When electrons flow through a conducting wire in an electric circuit containing a galvanometer, all of the following will occur, except
a. production of magnetism.
b. production of electricity.
c. production of electric current.
d. the needle of the galvanometer will not move.
3. All the following are magnetic materials, except
a. aluminum. b. cobalt. c. iron. d. nickel.

(B) Give a reason for the following :

The electric circuit contains a switch.

.....

2 (A) Put (✓) or (X) :

1. Water turbines help the generators to spin and generate electricity. ()
2. The electric current can flow through plastic. ()
3. Thermostat is used to adjust the temperature of a refrigerator. ()

(B) What happens to ...?

The gravity if the distance between an object and Earth's surface decreases.

.....

.....

3 Correct the underlined words :

1. The gravity is the flow of electric charges through a conducting wire. (.....)
2. The tool that is used to slow the flow of an electric current through the electric circuit is known as a battery. (.....)

Model Exam 1

on Concept (1.3)

Total mark

15

1 (A) Put (✓) or (X) :

(5 marks)

1. Magnetism is an attraction or repulsion force, while gravity is a repulsion force only. ()
2. The electric devices in houses are connected in series circuits. ()
3. The artificial pacemaker should contain a battery to do its function. ()
4. Magnets can be made of iron. ()

(B) Give a reason for the following :

All metals are considered as electric conductors.

.....

2 (A) Write the scientific term of each of the following :

(5 marks)

1. It is used to adjust the temperature inside some devices such as the refrigerator. (.....)
2. A muscle in the human body that beats regularly to push the blood inside the body. (.....)
3. The movement of charged particles through a conducting wire. (.....)
4. The area around the magnet at which the magnetic materials are attracted to the magnet. (.....)

(B) What is meant by (Define) :

Gravity :

3 (A) Choose from column (B) what suits it in column (A) :

(5 marks)

(A)	(B)
1. Electricity	a. is a closed path through which electrons move.
2. Electric circuit	b. is a source of electric charges in the circuit.
3. Electric insulator	c. is a form of energy.
4. Battery	d. is used to open and close the circuit.
	e. is a material that electric charges cannot flow through.

1. 2. 3. 4.

(B) Look at the following figures, then answer :

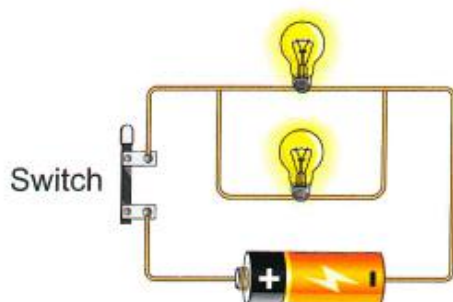


Figure (A)

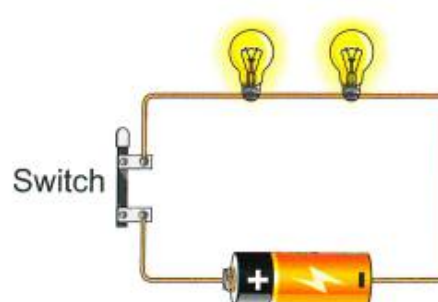


Figure (B)

a. Choose :

1. Which of these figures is a series circuit ? [Figure (A) – Figure (B)]
2. Which of these figures is a parallel circuit ? [Figure (A) – Figure (B)]

b. Put (✓) or (X) :

1. If we remove a lamp from the circuit in figure (A), the other lamp will still be lit. ()
2. If the switch in figure (B) is replaced by a metallic paper clip, all lamps will turn off. ()

1 (A) Choose the correct answer :

(5 marks)

- Magnets can be made of
 a. copper. b. glass. c. iron. d. plastic
- is a magnetic material that is attracted to the magnet.
 a. Paper b. Wood c. Nickel d. Copper
- is a material that cannot allow electric current to flow through.
 a. Iron b. Copper c. Plastic d. Aluminum

(B) Compare between :

Magnetic materials	Non-magnetic materials
• They are materials that	• They are materials that
• Examples :	• Examples :

2 (A) Put (✓) or (x) :

(5 marks)

- In the series circuits, the electric current can flow in different branches. ()
- The natural pacemaker inside the heart produces electrical currents to make it contracts. ()
- The magnet has a force called magnetism. ()
- The thermostat in a refrigerator contains an automatic switch. ()

(B) What happens if ...?

Aluminum foil is used to wrap the electric wires.

.....

.....

3 (A) Write the scientific term of each of the following :

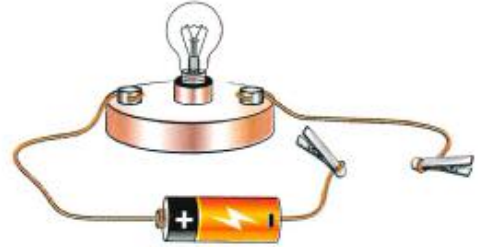
(5 marks)

- A device that can be used to detect the flow of electric current in electric circuits. (.....)

2. A device that is inserted into the chest to stimulate the heart to beat regularly. (.....)
3. A device that converts mechanical energy into electrical energy. (.....)
4. A tool which is used to open and close the electric circuit. (.....)

(B) Look at the opposite figure, then answer :

Classify the following materials into materials that will close the circuit and others that will not close it ? (giving reason).



(Iron nail – Plastic spoon – Piece of rubber – Metallic spoon – Piece of wood – Metallic key)

1. The materials which will close the circuit :

.....
The reason :
.....

2. The materials which will not close the circuit :

.....
The reason :
.....

November Tests

Total mark

15

Model 1

1 (A) Choose the correct answer :

(5 marks)

1. Water molecules have the lowest kinetic energy when it is in the form of
a. ice. b. water drops. c. water vapor. d. steam.
2. The area around the magnet in which its force appears is known as
a. magnetic field. b. magnetism. c. electric current. d. gravity.
3. The source of electricity in an electric circuit is a
a. metal wire. b. switch. c. battery. d. light bulb.
4. All the following materials are electric insulator, except
a. rubber. b. plastic. c. wood. d. steel.

(B) What happens if ...?

You touch a hot cup of tea.

(According to transfer of heat).

2 (A) Complete the following paragraph using the words below :

(5 marks)

(thermometer – different – mass – pacemaker)

1. Thermal energy transfers from one substance to another if they have temperature.
2. Expansion and contraction of liquids explain how a works.
3. The heart has a natural which causing the heart to contract.
4. Gravity attracts any object that has

(B) Give reason for the following :

Some electric circuits contain electric resistors.

3 (A) Put (✓) or (X) :

(5 marks)

1. Temperature increases in hot weather causing contraction of materials. ()
2. The attraction force of a far object from the Earth's surface is more than that of a near object. ()
3. A piece of aluminum foil and a plastic spoon will be attracted to the magnet. ()
4. To make an electric current flow through a circuit, all of its components must be connected to each other. ()

(B) Write the scientific term of each of the following :

1. The type of electric circuits in which all components must be connected in one loop. (.....)
2. It is a part of artificial pacemaker that sends information to physicians to know how the heart is behaving. (.....)

1 (A) Put (✓) or (x) :*(5 marks)*

1. All matter contain thermal energy. ()
2. Due to the great mass of Earth, it attracts all objects towards its center. ()
3. Cobalt is an example of magnetic materials. ()
4. Water in dams are used to operate wind turbines. ()

(B) Give a reason for the following :

Engineers use expansion joints in the design of bridges.

.....

2 (A) Write the scientific term of each of the following :*(5 marks)*

1. It is the increase of the size of a substance due to increasing of its temperature. (.....)
2. The materials that do not allow the electric charges to flow through. (.....)
3. A device can be used to detect the flow of electric currents. (.....)
4. A device inserted into the chest to stimulate the heart to beat regularly. (.....)

(B) What happens to ... ?

The force of gravity if the distance between the object and Earth's center increases.

.....

3 (A) Choose the correct answer :*(5 marks)*

1. Wind turbines need to produce electricity.
a. water force b. electric force c. gravity force d. generators
2. The electric wires can be made of or
a. wood – plastic. b. rubber – wood.
c. aluminum – copper. d. plastic – rubber.
3. are used to stop the flow of electricity.
a. Batteries b. Electric conductors
c. Electric insulators d. Galvanometers
4. The energy is related to the motion of particles of a matter.
a. chemical b. potential c. light d. thermal

(B) Cross out the odd word :

Ice – Glass – Oil – Copper. (.....)

Model 3

Total mark

15**1 (A) Put (✓) or (X) :**

1. Light bulbs can be connected together by two ways, which are series and parallel. ()
2. Electric insulators allow electric current to pass through them. ()
3. Molecules of solids move faster than molecules of liquids. ()
4. Expansion and contraction are two opposite processes. ()

(B) Give a reason for the following :

Electric generators have great importance in our life.

.....

2 (A) Complete the following sentences :

1. The boiling point of mercury is than that of water.
2. Thermal energy of a substance is the total sum of energy of its molecules and atoms.
3. The magnetic materials will be attracted to the magnet when they are located at its
4. In the circuit there is only one path that the electric current can flow through.

(B) What happens to ... ?

Bridges if engineers don't use expansion joints in their design.

.....

3 (A) Write the scientific term of each of the following :

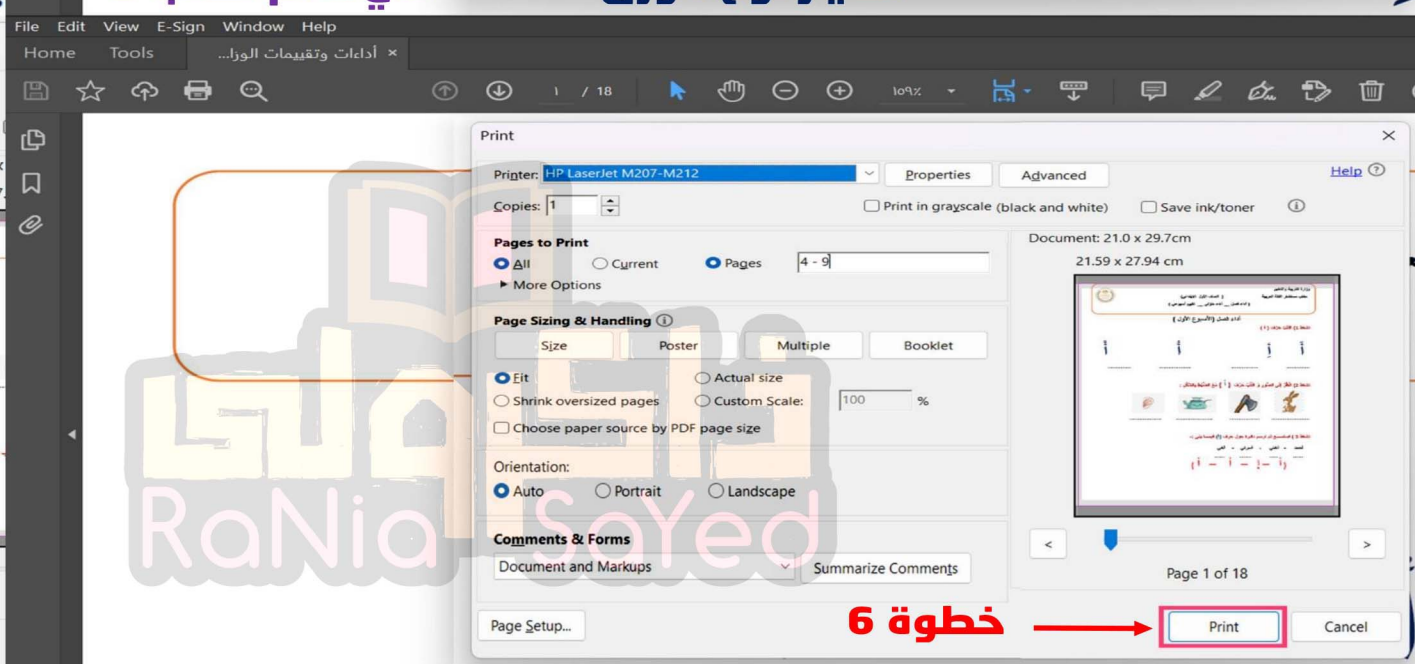
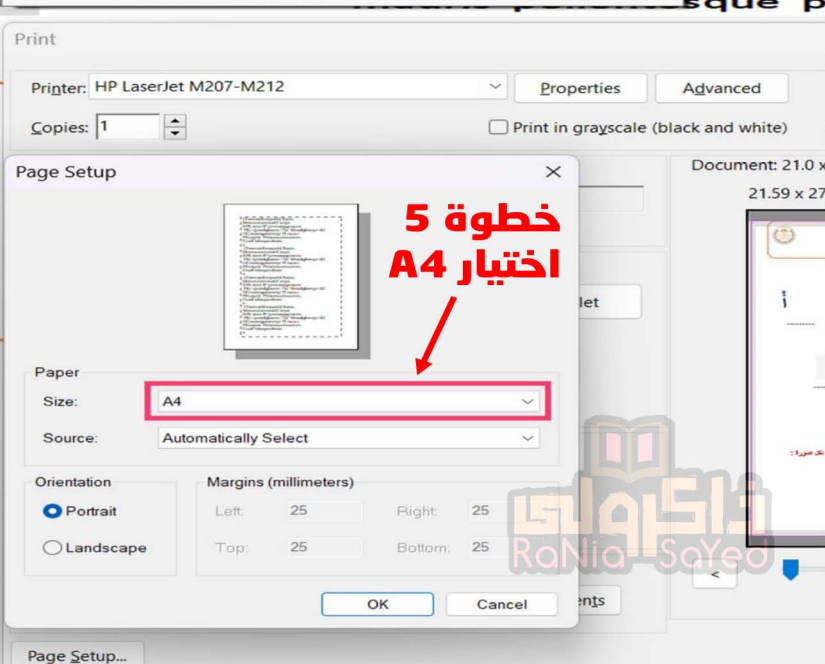
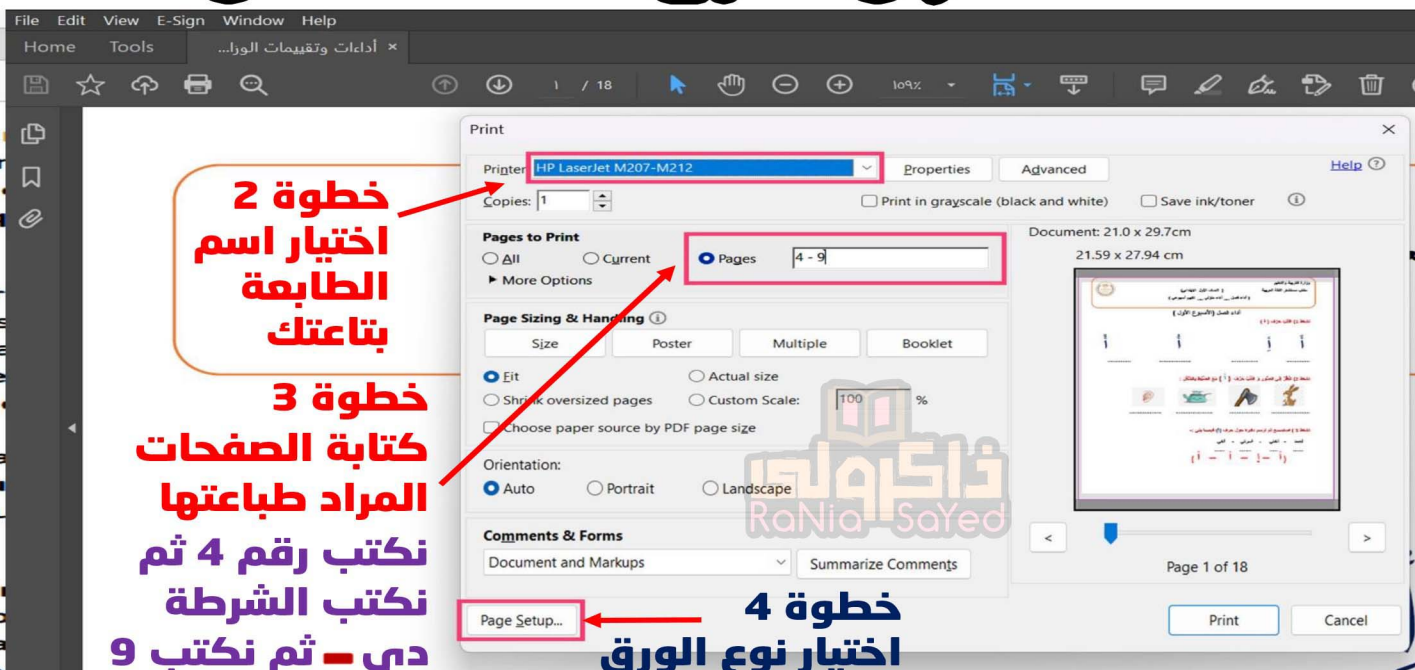
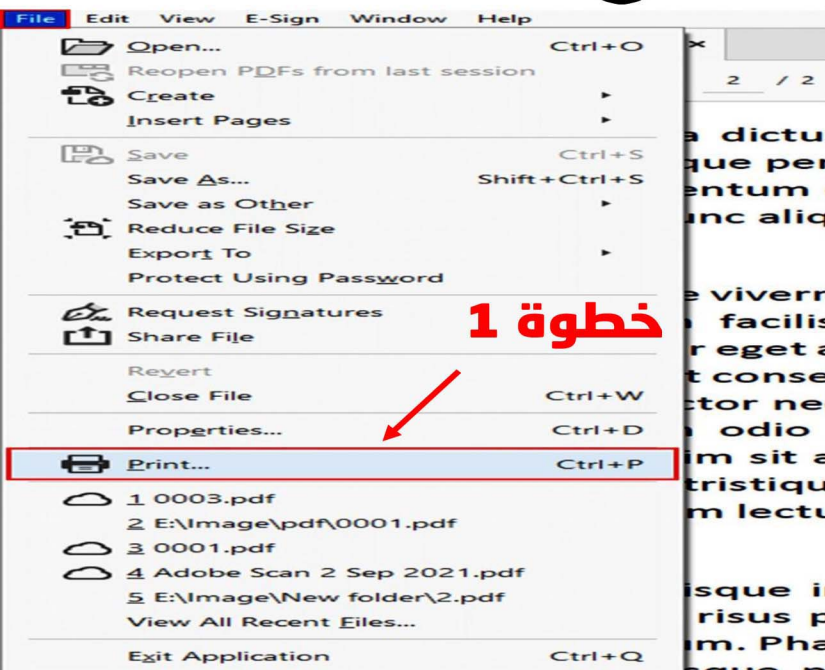
1. A device can be used to adjust the temperature inside refrigerators. (.....)
2. A tool which is used to open and close the electric circuit. (.....)
3. It is a group of atoms bound together. (.....)
4. The temperature at which matter changes from solid state to liquid state. (.....)

(B) Correct the underlined words :

1. The gravity is the flow of electric charges through a conducting wire. (.....)
2. Sound energy is changed into electrical energy in the generator. (.....)

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

اختبار شهر نوفمبر



Q1

Choose the correct answer:

- 1 All the following are responsible for excretion process, except the
(Alex, Giza 2024)

a. urinary system	b. respiratory system
c. skin	d. digestive system
- 2 All of the following are waste materials produced by body cells through their membranes except
(CW Week 6)

a. urine	b. sweat
c. feces	d. carbon dioxide
- 3 is the waste material that is expelled by the respiratory system.

a. Oxygen gas	b. Urea
c. Carbon dioxide gas	d. Feces

 (Giza 2024)
- 4 The system responsible for purifying blood and filtering waste from the body is the system.
(CW Week 6)

a. circulatory	b. urinary	c. respiratory	d. digestive
----------------	------------	----------------	--------------
- 5 The organ responsible for extracting excess water and salts in the form of sweat is
(CW Week 6)

a. kidney	b. skin	c. lung	d. colon
-----------	---------	---------	----------
- 6 The kidney is the main organ of the system.
(CW Week 6)

a. nervous	b. digestive	c. respiratory	d. urinary
------------	--------------	----------------	------------
- 7 Nephrons are
(CW Week 6)

a. vessels that hold urine before it exits the body
b. the place where urine exits the body
c. microscopic units that filter blood
d. all the previous answers

 (CW Week 6)
- 8 Urea is formed due to the breaking down of inside the body cells.
(Suez 2024)

a. carbohydrates	b. proteins	c. fats	d. acids
------------------	-------------	---------	----------

- 9 The microscopic filters inside the two kidneys are called
 a. urethra b. blood vessels c. nephrons d. ureters
- 10 The organ that secretes the insulin hormone for re
 (Cairo 2024)
 a. stomach b. pancreas c. liver d. heart

Q2 Put (✓) or (X):

- 1 Blood cells and proteins can pass through nephrons. (CW Week 6) ()
- 2 The digestive system is involved in the excretion process. (CW Week 6) ()
- 3 The skin is not considered an excretory organ in the body. (CW Week 6) ()
- 4 Sweat is excreted by the lung. (Qalioubia 2024) ()
- 5 The two kidneys remove waste materials from blood. (Menoufia 2024) ()
- 6 Nephron helps in the filtration of blood from urea. (Cairo 2024) ()
- 7 Nephrons are microscopic filters that remove harmful substances from the body. (Qalioubia 2024) ()
- 8 The excretory system removes waste resulting from the burning of food in cells. (School Book) ()
- 9 The excretory system breaks down food to provide energy and nutrients to the body. (School Book) ()
- 10 People whose kidneys are not working properly must use other devices to filter their blood from waste. (Gharbia 2024) ()

Q3 Write the scientific term of each of the following:

- 1 Hormone produced from the pancreas and regulates the amount of sugar in the blood. (HW Week 6) (.....)
- 2 The system which is responsible for storing wastes and getting rid of them. (HW Week 6) (.....)
- 3 An organ plays very important role in the urinary system. (HW Week 6) (.....)
- 4 A disease that is resulting from the disorder of secreting insulin hormone by pancreas. (Menoufia 2024) (.....)

Q4 Complete the following sentences:

- 1 Diabetes is a disorder of the system. (Test Week 9)
- 2 In people with diabetes, the does not produce enough insulin. (Test Week 9)
- 3 The in the urinary system purify the blood. (Test Week 9)

Q5 Cross out the odd word:

- 1 Kidneys – Bladder – Urethra – Lungs (.....)
- 2 Carbon dioxide – Stool – Urine – Sweat (.....)

Q6 Give reasons for:

- 1 The kidney is considered the main organ in the urinary system. (HW Week 6)
.....
.....
- 2 The feces are not considered excretory materials, although they are from the waste. (HW Week 6)
.....
.....
- 3 Blood cells and proteins cannot pass through the kidney's nephron. (Dakahlia 2024)
.....
.....
- 4 Diabetics must take regular shots of insulin. (Alex. 2024)
.....
.....

Q7 What happens if:

- 1 People have diabetes? (HW Week 6)
.....
.....
- 2 The nephrons of the kidneys not work properly? (Cairo 2024)
.....

Q1

Choose the correct answer:

- 1 The electric circuit contains which is responsible for opening and closing the electric circuit. (Sohag 2024 - CW Week 7)
 a. a battery b. a switch c. a lamp d. a resistor
- 2 The is used to limit the flow of electrons in an electrical circuit. (CW Week 8)
 a. resistor b. switch c. battery d. bulb
- 3 Scientists use a to detect the flow of electric current. (Cairo 2024)
 a. generator b. galvanometer c. battery d. switch
- 4 Generators convert energy to energy. (Luxor 2024)
 a. chemical – thermal b. thermal – sound
 c. sound – mechanical d. mechanical – electrical
- 5 The turbine uses the power of wind or water to generate energy to operate electrical generators. (CW Week 7)
 a. electrical b. mechanical c. solar d. chemical
- 6 is used to slow the flow of an electric current in the electric circuit. (Giza 2024)
 a. A battery b. A switch c. A resistor d. A lamp
- 7 The electrical wires are coated with a layer of (CW Week 8)
 a. iron b. aluminum c. plastic d. nickel
- 8 All the following are electric insulators, except (Alex. 2024)
 a. wood b. plastic c. rubber d. copper
- 9 is an example for electrical insulators. (CW Week 8)
 a. iron b. aluminum c. wood d. copper

- 10 Which of the following is a poor conductor of electricity and used to coat wires? (Cairo 2024)
 a. A conductor b. An insulator c. A switch d. A battery
- 11 Magnets can be made from (CW Week 7)
 a. copper b. glass c. iron d. plastic
- 12 All the following materials are called magnetic materials, except (Cairo 2024)
 a. iron. b. plastic. c. nickel. d. steel.
- 13 The area around the magnet in which magnetic force appears is (Cairo 2024)
 a. magnet. b. Magnetic force.
 c. Magnetism. d. magnetic field.
- 14 A magnetic field can be formed when an electric current flow around (Alex. 2024)
 a. a plastic core. b. a battery.
 c. a metal core. d. a rubber core.
- 15 The factors on which gravitational force depends on (CW Week9)
 a. mass and shape b. size and shape
 c. mass and volume d. distance and mass
- 16 The of an object and its from the Earth's surface, affect the gravity force. (Cairo 2024)
 a. mass – color b. distance – mass
 c. mass – distance d. shape – distance
- 17 Gravity and magnetism are similar in that
 a. they are repulsion forces only.
 b. they are attraction forces only.
 c. they are forces that attract all objects.
 d. we cannot see both of them. (Dakahlia 2024)
- 18 The artificial pacemaker is inserted into the of human body. (Dakahlia 2024)
 a. legs b. chest c. neck d. brain

- 19 The artificial pacemaker helps patients who suffers from
- | | |
|-------------------|-------------------------|
| a. kidney failure | b. diabetes |
| c. headaches | d. irregular heartbeats |

Q2

Put (✓) or (x):

- 1 In the parallel circuits, the electric current can flow in one branch. (Cairo 2024) ()
- 2 In the series circuits, the electric current can flow in different branches. (Giza 2024) ()
- 3 All electric circuits in our homes are connected in parallel. (Alex 2024) ()
- 4 The electric devices in houses are connected in series circuits. (Cairo 2024) ()
- 5 When a light bulb connected in series burns out, all the other light bulbs are turned off. (CW Week 7) ()
- 6 Electricity is considered a form of energy. (CW Week 7) ()
- 7 Water in dams is used to operate wind turbines. (Cairo 2024) ()
- 8 All materials allow electric current to flow through them. (Giza 2024) ()
- 9 The switch is the source of electricity in an electric circuit. (CW Week 7) ()
- 10 When placing an insulator in the electrical circuit; electricity flows. (CW Week 8) ()
- 11 Electrical resistors are found in some devices, such as electric stoves. (CW Week 8) ()
- 12 Copper, aluminum and rubber are electric conductors. (Dakahlia 2024) ()
- 13 An electric shock happens when touching a non-insulated wire that an electric current flows through. (CW Week 6) ()
- 14 A metallic spoon is an electric conductor. (CW Week 8) ()
- 15 Electricity and magnetism are related to each other. (Dakahlia 2024) ()

- 16 An electric current is generated when a static magnet is placed inside a coil. (CW Week 8) ()
- 17 Cobalt is an example of a magnetic material. (Giza 2024) ()
- 18 The magnet attracts all materials. (CW Week 7) ()
- 19 The force of gravity between an object and the Earth increases when the distance between them increases. (Cairo 2024) ()
- 20 The natural pacemaker inside our heart produces electrical currents to make it contract. (Giza 2024) ()

Q3

Correct the underline words:

- 1 Gravity is the force by which a magnet attracts some materials. (HW Week 7) (.....)
- 2 Magnetism is a pulling or pushing force, while gravity is a pushing force only. (HW Week 7) (.....)
- 3 Non-metals allow electric current to flow through them. (HW Week 7) (.....)
- 4 Water in dams is used to operate wind turbines. (HW Week 7) (.....)
- 5 Electricity can flow through electric insulators. (HW Week 8) (.....)
- 6 Scientists use a generator to detect the flow of small electric currents. (HW Week 8) (.....)
- 7 The electric wires are made of plastic and conduct electricity. (HW Week 8) (.....)
- 8 Galvanometers are used to stop the flow of electricity. (HW Week 8) (.....)

Q4

Write the scientific term:

- 1 A tool that is used to open and close the electric circuit. (CW Week 7) (.....)
- 2 One of the components of an electric circuit that is used to limit the flow of electricity through the circuit. (Cairo 2024) (.....)

- 3 A device for generating electricity by using magnets.
(Sharkia 2024) (.....)
- 4 The materials that are attracted to the magnet.
(Giza 2024 - CW Week 7) (.....)
- 5 The materials that are not attracted to the magnet.
(HW Week 7) (.....)
- 6 The area around the magnet in which its magnetic force appears.
(HW Week 7) (.....)
- 7 The pattern is formed by iron filling near the magnet.
(Test Week 9) (.....)
- 8 The flow of electric charges along a closed path.
(Alex. 2024 - CW Week 7) (.....)
- 9 The force of Earth which attracts all objects on its surface to its center.
(Test Week 7) (.....)
- 10 The materials that allow the electric charges to flow through.
(Test Week 7) (.....)
- 11 The two factors that affect the force of gravity .
(Test Week 7) (.....)
- 12 A battery-operated device that is inserted into the chest; to regulate heartbeat.
(CW Week 8) (.....)
- 13 The type of electric circuits that are found in houses and help in operating many devices at the same time.
(HW Week 8) (.....)
- 14 Materials that don't allow electrons to flow through them easily.
(Test Week 8) (.....)
- 15 Materials that allow electrons to flow through them easily.
(Test Week 8) (.....)
- 16 Small electric charges moving in the wires in a closed electrical circuit.
(CW Week 9) (.....)
- 17 The force of Earth attracts all objects on its surface to its center.
(HW Week 9) (.....)

- 18 A muscle in the human body that beats regularly to push the blood inside the body (Giza 2024) (.....)
- 19 A device inserted into the chest to stimulate the heart to beat regularly. (Behira 2024 - HW Week 9) (.....)
- 20 The device can be used to stimulate the heart muscle to beat regularly. (HW Week 8) (.....)

Q5

Complete the following sentences:

- 1 Electric circuits in houses are connected in a way. (Behira 2024)
- 2 The electric circuit contains a which is responsible for opening and closing the circuit. (Cairo 2024)
- 3 Electric wires are coated by as it is an electric insulator. (Test Week 8)
- 4 Rubber is an electric, while copper is an electric (Qena 2024 - Test Week 8)
- 5 Generators change energy into energy. (HW Week 8)
- 6 Materials that don't conduct electricity are called (Cairo 2024)
- 7 Wind turbines need the to produce electricity. (Test Week 7)
- 8 Electric energy transfers to the devices that are powered by electricity through (Test Week 7)
- 9 A moving magnet inside a coiled wire can generate (Test Week 8)
- 10 By increasing the number of loops in the coil, and moving a magnet inside it, the amount of generated electric current will (Test Week 8)
- 11 Magnets attract some metals, such as, and (Giza 2024)
- 12 Magnet can be made of and other materials. (Test Week 7)
- 13 Gold and copper are considered materials as they do not attract to the magnet. (Alex 2024)

- 14 The pattern that the iron filings make near the magnet is the outline of its (Test Week 7)
- 15 Gravity attracts any object that has (Luxor 2024)
- 16 All objects are pulled toward Earth's due to the force of Earth. (Cairo 2024)

Q6 Cross out the odd word:

- 1 Iron – Nickel – Aluminum – Cobalt (Cairo 2024) (.....)
- 2 Battery – Magnet – Wire – Light bulb (Assiut 2024) (.....)

Q7 Classify the following materials in the empty table: (Test Week 7)

(Wooden clip – metallic paper clip – Plastic spoon – piece of glass – copper wire – iron nail)

Magnetic materials	Non-magnetic materials
.....	
.....	

Q8 Answer the following questions

- 1 The figure that represents the way of connecting devices in houses is (Giza 2024)
1. Mention the components of the electric circuit (Qalyoubia 2024)

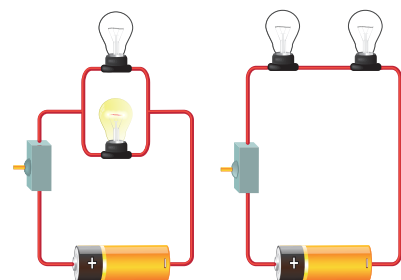


Figure A

Figure B

- 2 Define electric conductors (Minia 2024)

Q9

Give reasons for:

- 1 The electric circuit is considered a system. (Dakahlia 2024)
.....
.....
- 2 Wood and copper are not attracted to the magnet. (Aswan 2024 - CW Week 7)
.....
- 3 Cobalt and nickel are considered magnetic materials. (Test Week 7)
.....
- 4 Most electric wires are covered with rubber or plastic. (CW Week 7)
.....
- 5 The electric circuit must contain a battery. (CW Week 7)
.....
- 6 Electric generators have great importance in our lives. (Cairo 2024 - Test Week 7)
.....
.....
- 7 When a ball is thrown into the air, it will stop moving upward and then fall down (Test Week 7)
.....
- 8 Gravity and magnetism are different from the other forces. (Test Week 7)
.....
.....
- 9 The heart has a natural pacemaker. (HW Week 8)
.....
.....
- 10 Many devices such as toasters, microwaves, and electric stoves contain resistors. (Minia. 2024 - HW Week 8)
.....
.....
- 11 Some electric circuits contain electric resistors. (Alex. 2024)
.....
.....

- 12 In the parallel circuit, we can turn off or remove one light bulb while the other light bulbs will remain lit. (Test Week 8)

.....

.....

.....

- 13 Some electric circuits contain electric resistors. (Test Week 8)

.....

.....

- 14 The human body is considered as an electric conductor.

.....

.....

- 15 All metals are considered as electric conductors.

.....

.....

- 16 The human body is considered as an electric conductor. (Assiut 2024)

.....

.....

Q10

What happens if:

- 1 Large magnets spin at a high speed, around coiled wires?

(Dakahlia 2024 - CW Week 7)

.....

.....

- 2 The switch is turned on in the electric circuit? (Test Week 7)

.....

.....

- 3 The switch is turned off in the electric circuit? (Test Week 7)

.....

.....

- 4 The electric circuit doesn't contain a switch? (Cairo 2024)

.....

.....

- 5 The mass of an object increase? (Test Week 7)

.....

.....

- 6 The distance between an object and Earth's center increases? (Test Week 7)
- 7 The distance between objects and the center of the Earth decreases? (Test Week 7)
- 8 A magnet is approached close to some iron nails mixed with small pieces of paper? (Luxor 2024)
- 9 A magnet is moved inside a coil of wire in a circuit containing a galvanometer? (HW Week 8)
- 10 Aluminum foil is used to wrap electric wires? (Test Week 8)
- 11 Electric circuit in houses is connected in series? (Cairo 2024 - Test Week 8)
- 12 When a piece of wood is replaced by a piece of aluminum in an electrical circuit? (Test Week 9)
- 13 A person touches a non-insulated electric wire through which an electric current passes? (Behira 2024)
- 14 A patient has slow or irregular heartbeats? (Test Week 9)

Q1

Choose the correct answer:

- 1 All the following are responsible for excretion process, except the
(Alex, Giza 2024)

a. urinary system	b. respiratory system
c. skin	d. <u>digestive system</u>
- 2 All of the following are waste materials produced by body cells through their membranes except
(CW Week 6)

a. urine	b. sweat
c. <u>feces</u>	d. carbon dioxide
- 3 is the waste material that is expelled by the respiratory system.

a. Oxygen gas	b. Urea
c. <u>Carbon dioxide gas</u>	d. Feces

 (Giza 2024)
- 4 The system responsible for purifying blood and filtering waste from the body is the system.
(CW Week 6)

a. circulatory	b. <u>urinary</u>	c. respiratory	d. digestive
----------------	-------------------	----------------	--------------
- 5 The organ responsible for extracting excess water and salts in the form of sweat is
(CW Week 6)

a. kidney	b. <u>skin</u>	c. lung	d. colon
-----------	----------------	---------	----------
- 6 The kidney is the main organ of the system.
(CW Week 6)

a. nervous	b. digestive	c. respiratory	d. <u>urinary</u>
------------	--------------	----------------	-------------------

 (CW Week 6)
- 7 Nephrons are
(CW Week 6)

a. vessels that hold urine before it exits the body
b. the place where urine exits the body
c. <u>microscopic units that filter blood</u>
d. all the previous answers

 (CW Week 6)
- 8 Urea is formed due to the breaking down of inside the body cells.
(Suez 2024)

a. carbohydrates	b. <u>proteins</u>	c. fats	d. acids
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- 9 The microscopic filters inside the two kidneys are called
 a. urethra b. blood vessels c. **nephrons** d. ureters
- 10 The organ that secretes the insulin hormone for regulating sugar levels is
 (Cairo 2024)
 a. stomach b. **pancreas** c. liver d. heart

Q2 Put (✓) or (X) :

- 1 Blood cells and proteins can pass through nephrons. (CW Week 6) (X)
- 2 The digestive system is involved in the excretion process. (CW Week 6) (X)
- 3 The skin is not considered an excretory organ in the body. (CW Week 6) (X)
- 4 Sweat is excreted by the lung. (Qalioubia 2024) (X)
- 5 The two kidneys remove waste materials from blood. (Menoufia 2024) (✓)
- 6 Nephron helps in the filtration of blood from urea. (Cairo 2024) (✓)
- 7 Nephrons are microscopic filters that remove harmful substances from the body. (Qalioubia 2024) (✓)
- 8 The excretory system removes waste resulting from the burning of food in cells. (School Book) (✓)
- 9 The excretory system breaks down food to provide energy and nutrients to the body. (School Book) (X)
- 10 People whose kidneys are not working properly must use other devices to filter their blood from waste. (Gharbia 2024) (✓)

Q3 Write the scientific term of each of the following:

- 1 Hormone produced from the pancreas and regulates the amount of sugar in the blood. (HW Week 6) (**Insulin**)
- 2 The system which is responsible for storing wastes and getting rid of them. (HW Week 6) (**Excretory system**)
- 3 An organ plays very important role in the urinary system. (HW Week 6) (**Two kidneys**)
- 4 A disease that is resulting from the disorder of secreting insulin hormone by pancreas. (Menoufia 2024) (**Diabetes**)

Q4 Complete the following sentences:

- 1 Diabetes is a disorder of the **endocrine** system. (Test Week 9)
- 2 In people with diabetes, the **pancreas** does not produce enough insulin. (Test Week 9)
- 3 The **two kidneys** in the urinary system purify the blood. (Test Week 9)

Q5 Cross out the odd word:

- 1 Kidneys – Bladder – Urethra – **Lungs** (.....)
- 2 Carbon dioxide – **Stool** – Urine – Sweat (.....)

Q6 Give reasons for:

- 1 The kidney is considered the main organ in the urinary system. (HW Week 6)
Because the two kidneys filter the blood and remove waste from it.
- 2 The feces are not considered excretory materials, although they are from the waste. (HW Week 6)
Because the digestive system doesn't expel the wasted materials produced by the body cells.
- 3 Blood cells and proteins cannot pass through the kidney's nephron. (Dakahlia 2024)
Because red blood cells and proteins are too large, they do not pass through the kidney's nephrons
- 4 Diabetics must take regular shots of insulin. (Alex. 2024)
To release the needed insulin in the blood, which regulates sugar levels in the blood.

Q7 What happens if:

- 1 People have diabetes? (HW Week 6)
Their bodies can't produce the right amount of insulin, which causes an increase in the level of sugar in their blood.
- 2 The nephrons of the kidneys not work properly? (Cairo 2024)
The blood will not be filtered from harmful materials.

Q1

Choose the correct answer:

- 1 The electric circuit contains which is responsible for opening and closing the electric circuit. (Sohag 2024 - CW Week 7)
 a. a battery b. a switch c. a lamp d. a resistor
- 2 The is used to limit the flow of electrons in an electrical circuit. (CW Week 8)
 a. resistor b. switch c. battery d. bulb
- 3 Scientists use a to detect the flow of electric current. (Cairo 2024)
 a. generator b. galvanometer c. battery d. switch
- 4 Generators convert energy to energy. (Luxor 2024)
 a. chemical – thermal b. thermal – sound
 c. sound – mechanical d. mechanical – electrical
- 5 The turbine uses the power of wind or water to generate energy to operate electrical generators. (CW Week 7)
 a. electrical b. mechanical c. solar d. chemical
- 6 is used to slow the flow of an electric current in the electric circuit. (Giza 2024)
 a. A battery b. A switch c. A resistor d. A lamp
- 7 The electrical wires are coated with a layer of (CW Week 8)
 a. iron b. aluminum c. plastic d. nickel
- 8 All the following are electric insulators, except (Alex. 2024)
 a. wood b. plastic c. rubber d. copper
- 9 is an example for electrical insulators. (CW Week 8)
 a. iron b. aluminum c. wood d. copper

- 10 Which of the following is a poor conductor of electricity and used to coat wires? (Cairo 2024)
 a. A conductor b. An insulator c. A switch d. A battery
- 11 Magnets can be made from (CW Week 7)
 a. copper b. glass c. iron d. plastic
- 12 All the following materials are called magnetic materials, except (Cairo 2024)
 a. iron. b. plastic. c. nickel. d. steel.
- 13 The area around the magnet in which magnetic force appears is (Cairo 2024)
 a. magnet. b. Magnetic force.
 c. Magnetism. d. magnetic field.
- 14 A magnetic field can be formed when an electric current flow around (Alex. 2024)
 a. a plastic core. b. a battery.
 c. a metal core. d. a rubber core.
- 15 The factors on which gravitational force depends on (CW Week9)
 a. mass and shape b. size and shape
 c. mass and volume d. distance and mass
- 16 The of an object and its from the Earth's surface, affect the gravity force. (Cairo 2024)
 a. mass – color b. distance – mass
 c. mass – distance d. shape – distance
- 17 Gravity and magnetism are similar in that
 a. they are repulsion forces only.
 b. they are attraction forces only.
 c. they are forces that attract all objects.
 d. we cannot see both of them. (Dakahlia 2024)
- 18 The artificial pacemaker is inserted into the of human body. (Dakahlia 2024)
 a. legs b. chest c. neck d. brain

- 19 The artificial pacemaker helps patients who suffers from
- a. kidney failure b. diabetes
c. headaches d. irregular heartbeats

Q2

Put (✓) or (x):

- 1 In the parallel circuits, the electric current can flow in one branch. (Cairo 2024) (X)
- 2 In the series circuits, the electric current can flow in different branches. (Giza 2024) (X)
- 3 All electric circuits in our homes are connected in parallel. (Alex 2024) (✓)
- 4 The electric devices in houses are connected in series circuits. (Cairo 2024) (X)
- 5 When a light bulb connected in series burns out, all the other light bulbs are turned off. (CW Week 7) (✓)
- 6 Electricity is considered a form of energy. (CW Week 7) (✓)
- 7 Water in dams is used to operate wind turbines. (Cairo 2024) (X)
- 8 All materials allow electric current to flow through them. (Giza 2024) (X)
- 9 The switch is the source of electricity in an electric circuit. (CW Week 7) (X)
- 10 When placing an insulator in the electrical circuit; electricity flows. (CW Week 8) (X)
- 11 Electrical resistors are found in some devices, such as electric stoves. (CW Week 8) (✓)
- 12 Copper, aluminum and rubber are electric conductors. (Dakahlia 2024) (X)
- 13 An electric shock happens when touching a non-insulated wire that an electric current flows through. (CW Week 6) (✓)
- 14 A metallic spoon is an electric conductor. (CW Week 8) (✓)
- 15 Electricity and magnetism are related to each other. (Dakahlia 2024) (✓)

- 16 An electric current is generated when a static magnet is placed inside a coil. (CW Week 8) (X)
- 17 Cobalt is an example of a magnetic material. (Giza 2024) (✓)
- 18 The magnet attracts all materials. (CW Week 7) (X)
- 19 The force of gravity between an object and the Earth increases when the distance between them increases. (Cairo 2024) (X)
- 20 The natural pacemaker inside our heart produces electrical currents to make it contract. (Giza 2024) (✓)

Q3

Correct the underline words:

- 1 Gravity is the force by which a magnet attracts some materials. (HW Week 7) (Magnetism)
- 2 Magnetism is a pulling or pushing force, while gravity is a pushing force only. (HW Week 7) (Pulling)
- 3 Non-metals allow electric current to flow through them. (HW Week 7) (Metals)
- 4 Water in dams is used to operate wind turbines. (HW Week 7) (Water turbines)
- 5 Electricity can flow through electric insulators. (HW Week 8) (Electric conductors)
- 6 Scientists use a generator to detect the flow of small electric currents. (HW Week 8) (galvanometer)
- 7 The electric wires are made of plastic and conduct electricity. (HW Week 8) (copper)
- 8 Galvanometers are used to stop the flow of electricity. (HW Week 8) (Electric insulators)

Q4

Write the scientific term:

- 1 A tool that is used to open and close the electric circuit. (CW Week 7) (Switch)
- 2 One of the components of an electric circuit that is used to limit the flow of electricity through the circuit. (Cairo 2024) (Resistors)

- 3 A device for generating electricity by using magnets.
(Sharkia 2024) (**Generator**)
- 4 The materials that are attracted to the magnet.
(Giza 2024 - CW Week 7) (**Magnetic materials**)
- 5 The materials that are not attracted to the magnet.
(HW Week 7) (**Non-magnetic materials**)
- 6 The area around the magnet in which its magnetic force appears.
(HW Week 7) (**Magnetic field**)
- 7 The pattern is formed by iron filling near the magnet.
(Test Week 9) (**Magnetic field**)
- 8 The flow of electric charges along a closed path.
(Alex. 2024 - CW Week 7) (**Electric current**)
- 9 The force of Earth which attracts all objects on its surface to its center.
(Test Week 7) (**Gravity**)
- 10 The materials that allow the electric charges to flow through.
(Test Week 7) (**Electric conductors**)
- 11 The two factors that affect the force of gravity .
(Test Week 7) (**Mass and distance**)
- 12 A battery-operated device that is inserted into the chest; to regulate heartbeat.
(CW Week 8) (**Artificial pacemaker**)
- 13 The type of electric circuits that are found in houses and help in operating many devices at the same time.
(HW Week 8) (**Parallel circuits**)
- 14 Materials that don't allow electrons to flow through them easily.
(Test Week 8) (**Electric insulators**)
- 15 Materials that allow electrons to flow through them easily.
(Test Week 8) (**Electric conductors**)
- 16 Small electric charges moving in the wires in a closed electrical circuit.
(CW Week 9) (**Electrons**)
- 17 The force of Earth attracts all objects on its surface to its center.
(HW Week 9) (**Magnetism**)

- 18 A muscle in the human body that beats regularly to push the blood inside the body (Giza 2024) (**The heart**)
- 19 A device inserted into the chest to stimulate the heart to beat regularly. (Behira 2024 - HW Week 9) (**Artificial pacemaker**)
- 20 The device can be used to stimulate the heart muscle to beat regularly. (HW Week 8) (**Artificial pacemaker**)

Q5

Complete the following sentences:

- 1 Electric circuits in houses are connected in a **parallel** way. (Behira 2024)
- 2 The electric circuit contains a **switch** which is responsible for opening and closing the circuit. (Cairo 2024)
- 3 Electric wires are coated by **plastic** as it is an electric insulator. (Test Week 8)
- 4 Rubber is an electric **insulator**, while copper is an electric **conductor**. (Qena 2024 - Test Week 8)
- 5 Generators change **kinetic (mechanical)** energy into **electrical** energy. (HW Week 8)
- 6 Materials that don't conduct electricity are called **insulators** (Cairo 2024)
- 7 Wind turbines need the **kinetic energy of wind** to produce electricity. (Test Week 7)
- 8 Electric energy transfers to the devices that are powered by electricity through **wires**. (Test Week 7)
- 9 A moving magnet inside a coiled wire can generate **electric current**. (Test Week 8)
- 10 By increasing the number of loops in the coil, and moving a magnet inside it, the amount of generated electric current will **increase**. (Test Week 8)
- 11 Magnets attract some metals, such as **iron**, **nickel**, and **cobalt**. (Giza 2024)
- 12 Magnet can be made of **iron** and other materials. (Test Week 7)
- 13 Gold and copper are considered **non-magnetic** materials as they do not attract to the magnet. (Alex 2024)

- 14 The pattern that the iron filings make near the magnet is the outline of its **magnetic field**. (Test Week 7)
- 15 Gravity attracts any object that has **mass**. (Luxor 2024)
- 16 All objects are pulled toward Earth's **center** due to the **gravitational** force of Earth. (Cairo 2024)

Q6 Cross out the odd word:

- 1 Iron – Nickel – Aluminum – Cobalt (Cairo 2024) (**Aluminum**)
- 2 Battery – Magnet – Wire – Light bulb (Assiut 2024) (**Magnet**)

Q7 Classify the following materials in the empty table: (Test Week 7)

(Wooden clip – metallic paper clip – Plastic spoon – piece of glass – copper wire – iron nail)

Magnetic materials	Non-magnetic materials
Metallic paper clip - Iron nail	Wooden clip – Plastic spoon – Piece of glass – Copper wire

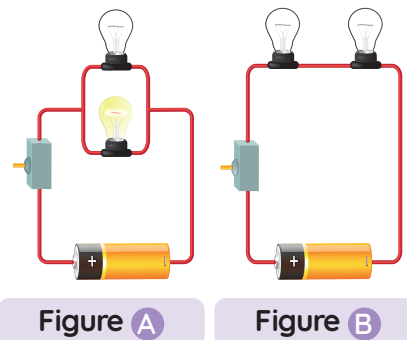
Q8 Answer the following questions

- 1 The figure that represents the way of connecting devices in houses is **figure A**. (Giza 2024)
1. Mention the components of the electric circuit. (Qalyoubia 2024)

A metal wire, a battery, a switch, and an electric device.

- 2 Define electric conductors (Minia 2024)

They are materials that allow electric current to flows easily through them.



Q9

Give reasons for:

- 1 The electric circuit is considered a system. (Dakahlia 2024)
Because the electric circuit consists of many components that work together to make electric current flow.
- 2 Wood and copper are not attracted to the magnet. (Aswan 2024 - CW Week 7)
Because wood and copper are non-magnetic materials.
- 3 Cobalt and nickel are considered magnetic materials. (Test Week 7)
Because cobalt and nickel are attracted to the magnet.
- 4 Most electric wires are covered with rubber or plastic. (CW Week 7)
To stop the flow of electricity and protect us from the electric shock.
- 5 The electric circuit must contain a battery. (CW Week 7)
Because the battery is the source of electricity in the electric circuit.
- 6 Electric generators have great importance in our lives. (Cairo 2024 - Test Week 7)
Because generators convert kinetic energy into electrical energy that is used in lighting houses and operating electrical devices..
- 7 When a ball is thrown into the air, it will stop moving upward and then fall down (Test Week 7)
Due to gravity that pulls objects down toward Earth's center.
- 8 Gravity and magnetism are different from the other forces. (Test Week 7)
Because magnetism is a pulling or pushing force while gravity is a pulling force only.
- 9 The heart has a natural pacemaker. (HW Week 8)
The heart has a natural pacemaker that creates electrical currents, causing the heart to contract.
- 10 Many devices such as toasters, microwaves, and electric stoves contain resistors. (Minia. 2024 - HW Week 8)
To limit the flow of the electric current in the electric circuit and prevent the damage of devices.
- 11 Some electric circuits contain electric resistors. (Alex. 2024)
Because resistors are used to slow the flow of electrons through an electric circuit to avoid the damage of its other components.

- 12 In the parallel circuit, we can turn off or remove one light bulb while the other light bulbs will remain let. (Test Week 8)

Because in a parallel circuit, all light bulbs are connected in different paths (branches), if one bulb is turned off, the other devices will continue to work.

- 13 Some electric circuits contain electric resistors. (Test Week 8)

To limit the flow of the electric current in the electric circuit and prevent the damage of devices.

- 14 The human body is considered as an electric conductor.

Because the human body contains a lot of water which is a good conductor of electricity.

- 15 All metals are considered as electric conductors.

Because metals allow electricity to flow through them.

- 16 The human body is considered as an electric conductor. (Assiut 2024)

Because the human body contains a lot of water, which is a good conductor of electricity.

Q10

What happens if:

- 1 Large magnets spin at a high speed, around coiled wires?

(Dakahlia 2024 - CW Week 7)

An amount of electricity is produced and flows through the wires.

- 2 The switch is turned on in the electric circuit?

(Test Week 7)

The electric circuit becomes closed, so the electric current flows through the circuit and the light bulb will turn on.

- 3 The switch is turned off in the electric circuit?

(Test Week 7)

The electric circuit becomes opened, so the electric current doesn't flow through the circuit and the light bulb will turn off.

- 4 The electric circuit doesn't contain a switch?

(Cairo 2024)

We can't open or close the electric circuit easily.

- 5 The mass of an object increase?

(Test Week 7)

The gravity (gravitational force) will increase.

- 6 The distance between an object and Earth's center increases? (Test Week 7)
The gravity (gravitational force) will decrease.
- 7 The distance between objects and the center of the Earth decreases? (Test Week 7)
The gravity (gravitational force) will increase.
- 8 A magnet is approached close to some iron nails mixed with small pieces of paper? (Luxor 2024)
The magnet will attract the iron nails but it will not attract the small pieces of paper.
- 9 A magnet is moved inside a coil of wire in a circuit containing a galvanometer? (HW Week 8)
The needle of the galvanometer moves and this indicates there is an electric current flow.
- 10 Aluminum foil is used to wrap electric wires? (Test Week 8)
The electric current will flow through it which causes an electric shock when touching electric wires.
- 11 Electric circuit in houses is connected in series? (Cairo 2024 - Test Week 8)
If one light bulb is disconnected, the other light bulbs will not work.
- 12 When a piece of wood is replaced by a piece of aluminum in an electrical circuit? (Test Week 9)
The electric current will flow through the closed electric circuit.
- 13 A person touches a non-insulated electric wire through which an electric current passes? (Behira 2024)
The electric current will flow through his body and he will be shocked by electricity.
- 14 A patient has slow or irregular heartbeats? (Test Week 9)
The patient will need an artificial pacemaker to keep the heart beating correctly.

حمل الآن

مجاناً وحصرياً

المراجعة رقم (3)

اختبار شهر نوفمبر



1 A) Choose the correct answer:

- The is responsible for secreting sweat.

a) esophagus b) stomach c) skin d) kidney

B) Give a reason for each of the following:

- 1 Wood and copper are not attracted to the magnet.

.....

- 2 Excretion is important to our bodies.

.....

- 3 The electric circuit is considered a system.

.....

2 A) Put (✓) or (X) in front of the following sentence:

- Cobalt is an example of magnetic materials. ()

B) Define:

- 1 Urination process

.....

- 2 Gravity

.....

3 A) Write the scientific term:

- The area around the magnet in which magnetic force appears. (.....)

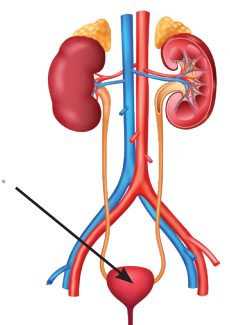
B) Look at the opposite figure, then answer:

- 1 The opposite figure represents the system which helps the body to

.....

- 2 Write the function of the organ labeled in the opposite figure.

.....



1 A) Complete the following sentence:

- Magnets attract some metals, such as,, and

B) What happens ...?

- 1 If people with diabetes do not receive regular shots of insulin.
.....

- 2 If the electric circuit doesn't contain electric wires.
.....

- 3 If the two narrow tubes in the urinary system are removed.
.....

2 A) Write the scientific term:

- An automatic switch that adjusts the temperature inside appliances like refrigerators, by turning on and off. (.....)

B) What is the importance of ...?

- 1 The battery in an electric circuit
.....

- 2 Artificial pacemaker
.....

3 A) Cross out the odd word:

- Battery – Light bulb – Magnet – Switch.

B) Look at the opposite figure, then answer:

- 1 Figure (.....) represents a/an electric circuit, in which the switch is and the electric current through the circuit.

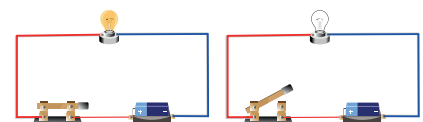


Figure 1

Figure 2

- 2 Figure (.....) represents a/an electric circuit, in which the switch is and the electric current through the circuit.

1 A) Choose the correct answer:

- The works as a filtration system.
 - a) heart
 - b) stomach
 - c) kidney
 - d) bladder

B) Answer the following questions:

- Skin is one of the excretory organs. Explain why.

2 Compare between parallel circuit and series circuit in terms of ... :

P.O.C	Series circuit	Parallel circuit
Path of current flow		

- Cross out the odd word, then write the relation between the other words:
- Iron nail - Plastic spoon - Metallic spoon - Metallic key.

2 A) Write the scientific term:

- It is a system that is responsible for removing the waste materials produced from cells. (.....)

B) What happens ...?

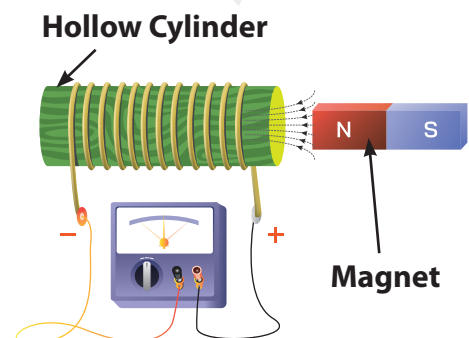
- If one light bulb burns out in a series circuit "in terms of other bulbs".
- When you throw an apple up into the air.

3 A) Complete the following sentence:

- During urination, the urine is expelled out from the body through the

B) Look at the opposite figure, then answer:

- When the magnet moves inside the hollow cylinder, an is induced in the coil, which can be detected by using a
- The needle of this device moves more rapidly when the



1 A) Put (✓) or (X) in front of the following sentence:

- The electric devices in houses are connected in series circuits. ()

B) Give a reason for each of the following:

- 1 Some electric circuits contain electric resistors.

.....

- 2 Blood cells and proteins cannot pass through the kidney's nephrons.

.....

- 3 The excretory system keeps the body healthy.

.....

2 A) Write the scientific term:

- They are microscopic filters found inside the two kidneys. (.....)

B) What is the importance of ...?

- 1 Electric generator

.....

- 2 A switch in an electric circuit

.....

3 A) Complete the following sentence:

- Some waste materials leave our bodies through the lungs in the form of

B) Compare between electric conductors and electric insulators in terms of ...?

P.O.C	Electric conductors	Electric insulators
Ability to conduct electricity		
Examples		

1 A) Choose the correct answer:

- The two kidneys play an important role in the formation of inside your body.

a) water b) blood c) urea d) urine

B) First: Give a reason for each of the following:

- 1 Both gravity and magnetism are non-contact forces.

.....

- 2 The heart is a natural pacemaker.

.....

Second: What is the importance of ...?

- insulin pump.

.....

2 A) Complete the following sentence:

- Urea is formed due to the breakdown of

B) What happens when ...?

- 1 The electric wires are not coated with plastic.

.....

- 2 The blood does not pass through the kidneys.

.....

3 A) Put (✓) or (X):

- There is no relation between magnetism and electricity. ()

B) Define each of the following:

- 1 Excretion process.

.....

- 2 Electric circuit.

.....

1 A) Choose the correct answer:

• The is responsible for secreting sweat.

- a) esophagus b) stomach c) skin d) kidney

B) Give a reason for each of the following:

1 Wood and copper are not attracted to the magnet.

• Because they are nonmagnetic materials.

2 Excretion is important to our bodies.

• Because it helps the body get rid of the wastes produced by the cells.

3 The electric circuit is considered a system.

• Because its components (such as wires, a power source, and a device) work together as a single unit to allow electricity to flow.

2 A) Put (✓) or (X) in front of the following sentence:

• Cobalt is an example of magnetic materials.

(✓)

B) Define:

1 Urination process

• It is the process of expelling urine from the body.

2 Gravity

• It is the force that affects everything which has mass.

3 A) Write the scientific term:

• The area around the magnet in which magnetic force appears.

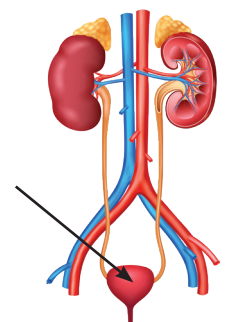
(Magnetic field)

B) Look at the opposite figure, then answer:

1 The opposite figure represents the **urinary** system which helps the body to **remove waste materials from the blood in the form of urine**.

2 Write the function of the organ labeled in the opposite figure.

• The urine is collected in it until it is expelled out through urethra.



1 A) Complete the following sentence:

- Magnets attract some metals, such as **steel**, **nickel**, and **cobalt**.

B) What happens ...?

- 1 If people with diabetes do not receive regular shots of insulin.
 - Their blood sugar levels will rise.
- 2 If the electric circuit doesn't contain electric wires.
 - The electric current will not flow through the electric circuit.
- 3 If the two narrow tubes in the urinary system are removed.
 - The urine will not transfer from the two kidneys to the urinary bladder.

2 A) Write the scientific term:

- An automatic switch that adjusts the temperature inside appliances like refrigerators, by turning on and off. **(Thermostat)**

B) What is the importance of ...?

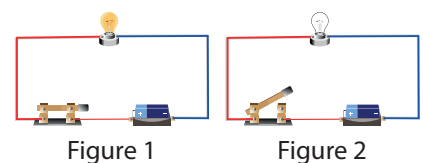
- 1 The battery in an electric circuit
 - It is the source of electricity.
- 2 Artificial pacemaker
 - It simulates the heart muscle to beat at regular intervals for patients with slow or irregular heartbeats.

3 A) Cross out the odd word:

- Battery – Light bulb – **Magnet** – Switch.

B) Look at the opposite figure, then answer:

- 1 Figure (1) represents a/an **closed** electric circuit, in which the switch is **closed** and the electric current **flows** through the circuit.
- 2 Figure (2) represents a/an **open** electric circuit, in which the switch is **open** and the electric current **doesn't flow** through the circuit.



1 A) Choose the correct answer:

- The works as a filtration system.
 - a) heart
 - b) stomach
 - c) kidney
 - d) bladder

B) Answer the following questions:

- Skin is one of the excretory organs. Explain why.
 - Because it helps the body get rid of waste materials through pores of the skin in the form of sweat.
- Compare between parallel circuit and series circuit in terms of ... :

P.O.C	Series circuit	Parallel circuit
Path of current flow	The current flows along one path	The current flows along different branches

- Cross out the odd word, then write the relation between the other words:
 - Iron nail - Plastic spoon - Metallic spoon - Metallic key.
 - (Plastic spoon, while the other words are electric conductors).

2 A) Write the scientific term:

- It is a system that is responsible for removing the waste materials produced from cells. (Urinary system)

B) What happens ...?

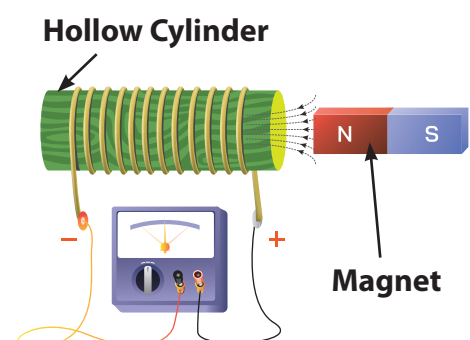
- If one light bulb burns out in a series circuit "in terms of other bulbs".
 - All the other bulbs will turn off because the circuit becomes open and the electric current cannot flow.
- When you throw an apple up into the air.
 - The apple will rise for a short time, then fall back down due to the Earth's gravity.

3 A) Complete the following sentence:

- During urination, the urine is expelled out from the body through the **urethra**.

B) Look at the opposite figure, then answer:

- When the magnet moves inside the hollow cylinder, an **electric current** is induced in the coil, which can be detected by using a **galvanometer**.
- The needle of this device moves more rapidly when the **magnet moves faster**.



1 A) Put (✓) or (X) in front of the following sentence:

- The electric devices in houses are connected in series circuits. (X)

B) Give a reason for each of the following:

- 1 Some electric circuits contain electric resistors.
 - Because the electric resistors limit the flow of electric current in the circuit to protect other components.
- 2 Blood cells and proteins cannot pass through the kidney's nephrons.
 - Because they are too large to pass through them.
- 3 The excretory system keeps the body healthy.
 - Because it is responsible for storing and getting rid of waste materials produced from cells.

2 A) Write the scientific term:

- They are microscopic filters found inside the two kidneys. (Nephrons)

B) What is the importance of ...?

- 1 Electric generator
 - It changes the mechanical energy into electrical energy used in lighting houses and operating electrical devices.
- 2 A switch in an electric circuit
 - It is the tool that is used to open and close the electric circuit.

3 A) Complete the following sentence:

- Some waste materials leave our bodies through the lungs in the form of carbon dioxide gas.

B) Compare between electric conductors and electric insulators in terms of ...?

P.O.C	Electric conductors	Electric insulators
Ability to conduct electricity	They allow electric current "electrons" flow easily through them.	They do not allow electric current "electrons" flow through them easily.
Examples	All metals - Water	Rubber - Plastic

1 A) Choose the correct answer:

- The two kidneys play an important role in the formation of inside your body.

a) water b) blood c) urea d) urine

B) First: Give a reason for each of the following:

- Both gravity and magnetism are non-contact forces.
 - Because they affect objects without direct contact.
- The heart is a natural pacemaker.
 - Because it generates electric currents sent out through the heart to regulate its contractions.

Second: What is the importance of ...?

- insulin pump.
 - It is a device attached to the body to help diabetics regulate the blood sugar levels with automatic insulin injections.

2 A) Complete the following sentence:

- Urea is formed due to the breakdown of **protein**.

B) What happens when ...?

- The electric wires are not coated with plastic.
 - We will get an electric shock.
- The blood does not pass through the kidneys.
 - The body will not be able to filter wastes and toxins, causing harmful substances to accumulate in the blood.

3 A) Put (✓) or (X):

- There is no relation between magnetism and electricity. (X)

B) Define each of the following:

- Excretion process.
 - It is the process by which the body gets rid of waste materials produced from cells.
- Electric circuit.
 - A closed path through which the electric current flows.

حمل الآن

مجاناً وحصرياً

المراجعة رقم (4)

اختبار شهر نوفمبر



Question 1

Put ✓ or ✗ to the following

Unit 1
Concept 1.2

1 - The two kidneys remove waste materials from the blood.	()
2 - Nephron helps in the filtration of blood from urea.	()
3 - Urine is expelled outside the body through urethra	()
4 - Blood cells and proteins are too small, so they can pass through the nephrons of kidneys.	()
5 - Kidneys considered as a filtering system for the blood	()
6 - People whose kidneys are not working properly must use other devices to her their blood from waste.	()
7 - proteins can pass through nephrons during filtration of blood in the two kidneys.	()
8 - Studying a kidney model can save time, money and effort.	()
9 - The force of gravity between an object and the Earth increases, when the distance between them increases.	()
10 - Magnetism is an attraction or a repulsion force, while gravity is a repulsion force only.	()
11 - The force of gravity appears when any object is thrown upward into the air as it returns back to the Earth's surface.	()
12 - All materials can be attracted to the magnet.	()
13 - Cobalt is an example of magnetic materials.	()
14 - Water in dams are used to operate wind turbines.	()
15 - The thermostat in a refrigerator contains an automatic switch.	()
16 - All materials allow electric current to flow through them.	()

17 - Copper, aluminum and rubber are electric conductors.	()
18 - All metals are electric insulators.	()
19 - Electric wire can be made of copper and covered with plastic or rubber.	()
20- Electricity and magnetism can work together.	()
21- In the series circuit, the electric current can flow in different branches.	()
22 - The electric device in houses are connected in series circuits.	()
23 - The device that is to detect the electric current is called galvanometer.	()
24 - By increasing the number of loops in coil and moving a magnet inside it rapidly, the amount of generated electric current will decrease.	()
25 - There is no relation between magnetism and electricity.	()
26 – the natural pacemaker inside our heart produces electrical currents to make it contract.	()
27 – The natural pacemaker contains a built-in antenna.	()
28 – matter can be changed from one state to another.	()
29 – Glass can be melted at very low temperature.	()
30 – All matter contains thermal energy.	()
31 – Heat flows from a hotter substance to a colder substance.	()
32 – If you hold a hot cup of tea with your hand, heat transfers from your hand to the cup.	()
33 – molecules of solids move faster than molecules of liquid.	()

Question 2

Write scientific term for each of the following ?

Unit 1
Concept 1.2

- 1- The process of converting complex substances into simple substances that the body can use.(.....)
- 2- The process of expelling harmful substances from the body. (.....)
- 3- A system whose function is to get rid of waste produced by the vital processes that take place inside our bodies. (.....)
- 4- The organ responsible for producing the insulin hormone. (.....)
- 5- Device attached to the body that helps diabetics regulate their blood sugar levels. (.....)
- 6- It is a microscopic filter that is found in the two kidneys and filters the blood from waste materials. (.....)
- 7- An organ that has a very important function in the excretory system. (.....)
- 8- A substance which is formed due to the breakdown of proteins Inside the body cells (.....)
- 9- An organ that collects urine inside it. (.....)
- 10- A tube that transports urine to the bladder. (.....)
- 11- A disease that occurs as a result of a disorder in the secretion of the insulin hormone. (.....)
- 12- It is the process of expelling urine from the body. (.....)

- 13-** A hormone that regulates the let of sugar in the human blood. (.....)
- 14-** A device that is used diabetics to help regulate the blood sugar with automatic injections of insulin. (.....)
- 15-** The force of Earth which attracts all objects on its surface or to its center . (.....)

Concept 1.3

- 16-** The space around a magnet where its magnetic force appears. (.....)
- 17-** Materials attracted to magnets. (.....)
- 18-** Materials that are not attracted to magnets. (.....)
- 19-** The device which converts mechanical energy into electrical energy . (.....)
- 20-** The flow of electrons through an electric wire. (.....)
- 21-** Electrical energy is transferred to electrical devices through (.....)
- 22-** The two factors that affect the force of gravity. (.....)
- 23-** A closed loop which electric current can flow through. (.....)
- 24-** A tool which is used to open and close the electric circuit . (.....)

- 25-** An electrical circuit in which all components are connected in a single path. (.....)
- 26-** It contains an automatic switch to adjust the temperature inside the refrigerator. (.....)
- 27-** A component in the circuit that reduces current flow. (.....)
- 28-** A type of connection in which the lamps are connected to two different branches. (.....)
- 29-** A material that allows electrons to flow through it easily. (.....)
- 30-** A device that is inserted into the chest and stimulates the heart muscle to beat at regular intervals. (.....)
-
- Concept 2.1**
- 31-** The materials that allow the electric charges to flow through. (.....)
- 32-** A measure of the average kinetic energy of particles in a substance. (.....)
- 33-** The process of converting matter from its solid state to its liquid state (.....)
- 34-** The process of converting a substance from a gas to a liquid. (.....)
- 35-** The process of converting a substance from a liquid state to a solid state. (.....)
- 36-** A device used to infer the passage of electric current in a circuit. (.....)

- 37-** It is the smallest building unit of matter.(.....)
- 38-** it is a group of atoms bound together. (.....)
- 39-** A state of matter that bonding forces between its particles disappears. (.....)
- 40-** The energy that the body gains due to its movement and increases with the speed of the body. (.....)
- 41-** It is a measure of the average kinetic of molecules and atoms of a substance. (.....)

Question 3**Give reason for the following****Unit 1
Concept 1.2**

- 1-** Food, water and oxygen are very important for your body.
.....
.....
- 2-** The respiratory system plays an important role in the excretion process.
.....
.....
- 3-** The digestive process plays an important role in getting energy.
.....
.....
- 4-** The urinary system has a major role in human life.
.....
.....
- 5-** Proteins do not pass through the nephrons.
.....
.....
- 6-** The excretory systems in the human body are varied.
.....
.....

7- The kidney has an important function in the urinary system.

8- The body systems work together as one system.

9- The importance of the endocrine system in the human body.

10- An insulin pump is important for a diabetic.

11- Importance of excretion process to your body.

12- The two kidneys contain many nephrons.

13- Generators are used in electrical power stations.

14- Why the electric lamp connected to a battery does not light up when there is cutting in the connecting wire.

15- Gravity and magnetism differ from other forces.

Concept 1.3

16- The thermostat has a role in electrical appliances.

17- Parallel connection is better than series connection.

18- Many countries are interested in building power stations.

19- There is a mutual effect between magnetism and electricity.

20- The electric circuit is connected as a system.

21- Cobalt and nickel are considered as magnetic materials.

22- wood and copper are not attracted to the magnet.

23- Al metals are considered as electric conductors.

24- A human is exposed to an electric shock when touching an uninsulated wire through which an electric current is passing.

25- Electric generators play an important role in our life.

26- The human body is considered as an electric conductor.

27- The amount of heat energy of molten wax is greater than that of solid wax.

.....

.....

28- Thermal energy varies depending on the type of material.

.....

.....

29- You feel cold when you hold an ice cube in your hand.

.....

.....

30- you hold a hot cup in your hand.

.....

.....

31- There are different methods of heat transfer.

.....

.....

32- The amount of heat energy of an object and the amount of its kinetic energy depends on the velocity of its particles.

.....

.....

33- The color of food spreads in hot water faster.

.....

.....

34- The boiling point and melting point are from the physical properties of each material.

.....

.....

Question 4

What happens if

Unit 1
Concept 1.2

1- Urine collects in the bladder .

.....

.....

2- Undigested food collects in the large intestine.

3- Your body doesn't get rid of waste materials.

Concept 1.3

4- the body is unable to secrete enough insulin or use it

5- The distance between an object and the center of the Earth increases.

6- The switch in the electrical circuit is opened.

7- A magnet is close to the end of the plastic ruler.

8- The distance between the object and the center of the Earth decreases.

9- The mass of the object increases (in relation to gravity).

10- The switch in the electrical circuit is closed.

11- A glass rod is placed in an electrical circuit containing a switch, a battery, and a light bulb.

12- A piece of aluminum is placed in an electrical circuit containing a switch, a battery, and a light bulb.

13- Increasing the number of copper wire coils in an electromagnet.

14- one of the components of the electrical circuit is removed or damaged.

15- A rubber thread is used instead of a metal wire in the electrical circuit.

16- Electrical wires are covered with aluminum foil.

17- electrical circuits in the home are connected in series.

18- A person's heartbeat is irregular or slow.

19- The mass of an object decreases.
(according to the force of gravity)

20- The distance between an object and Earth's center increases. (according to the force of gravity)

21- The electric circuit doesn't contain a switch.

.....

.....

Concept 2.1

22- A person touches non-insulated electric wire through which an electric current passes.

.....

.....

23- The state of glass when it is heated at very high temperatures.

.....

.....

24- two objects of the same temperature contact each other.

.....

.....

25- Adding two equal amounts of food colors in hot water and in cold water

.....

.....

26- To the particles of matter when they reach freezing point?

.....

.....

Question 5

Choose the correct answer

Unit 1
Concept 1.2

1- Urination process happens by the help of the.....system

a. digestive. b. urinary. c. respiratory. d. Skeletal

2- Diabetes disease occurs due to a disorder in one organ of..... system.

a. respiratory. b. Nervous. c. endocrine. d. Urinary

3- The organ which responsible for secreting insulin hormone is the

- a. gallbladder. b. Pancreas c. Liver d. stomach

4- Insulin hormone is responsible for regulating the level of in blood.

- a. proteins. b. Fats c. Water. d. sugar

5- people who suffer from diabetes can use the insulin pump device that injects the body automatically with

- a. sugar b. water c. insulin. d. carbohydrates.

6- The of an object and its from the Earth's surface, affect the gravity force.

Concept 1.3

- a. mass-color. b. distance-mass.
c. mass-distance d shape-distance

7- Magnets can be made of

- a. copper. b. glass. c. iron. d. plastic.

8- is a magnetic material that is attracted to the magnet.

- a. Copper. b. Nickel c. Paper d. Wood

9- All the following materials are called magnetic materials, except

- a . Iron. b . Plastic. c. Nickel. d. Steel .

10- Generators convert energy to energy.

- a. Chemical- thermal. b. thermal-sound.
c. Sound- mechanical d. mechanical -electrical

11- The flow of electric charges along a closed path is known as

- a . electric wire. b. light energy
c. electric current. d. sound energy

13 - are used to spin the magnet in the generator to produce electricity.

- | | |
|---------------------------|---------------------|
| a. Water and winds. | b. Light and sound. |
| c. Electricity and sound. | d. Sound and heat |

14- Wind turbines need to produce electricity

- | | |
|-------------------|-------------------|
| a. water force. | b. electric force |
| c. gravity force. | d. generators |

15- The source of electricity in an electric circuit is a

- | | | | |
|---------------|-----------|-------------|----------------|
| a. metal wire | b. switch | c. battery. | d. Light bulb. |
|---------------|-----------|-------------|----------------|

16- The electric circuit contains a which is responsible for opening and closing the circuit.

- | | | | |
|------------|------------|----------------|-----------|
| a. battery | b. Switch. | c. Light bulb. | d. heated |
|------------|------------|----------------|-----------|

17- All the following materials are considered as electrical conductor except

- | | | | |
|-----------|-----------|-----------|--------------|
| a. Copper | b. Water. | c. rubber | d. Aluminium |
|-----------|-----------|-----------|--------------|

18- the automatic internal switch on a is used in the refrigerator to adjust its temperature.

- | | |
|----------------|----------------|
| a. battery | b. Thermostat. |
| c. Light bulb. | d. Wall socket |

19- A magnetic field can be formed when an electric current flow around

- | | |
|-----------------|----------------|
| a. plastic core | b. battery |
| c. metal core | d. rubber core |

20- are used to stop the flow of electricity

- | | |
|-------------------------|------------------------|
| a. Batteries. | b. Electric conductors |
| c. Electric insulators. | d. Galvanometers |

21- In a the electric current can flow through different branches

- a. Parallel circuit only. b. Electric circuit only
c. resistors. d. Series and parallel circuits

22- A Is used to slow the flow of an electric current in the electric circuit.

- a. Battery b. switch. c. resistor d. Lamp

23- Scientists use a To detect the flow of electric currents.

- a. Generator b. galvanometer. c. battery d. Switch

24- Electric resistors are found in all of the Following devices, except.....

- a. Toasters. b. microwaves .
c. Electric stoves d. batteries

25- The Is a muscle that inside the human body to push the blood to all body parts.

- a. Stomach. b. brain. c. heart d. Liver

26-The artificial pacemaker is inserted into the of the human body.

Concept 2.1

- a. brain. b. Chest . c. Legs. d. hands

27- The molecules is a group of very small particles called

- a. Cells . b. atoms c. Mixtures. d. Compounds.

28- Both..... and are examples of liquid matter.

- a. water- milk b. Water- wood.
c. Water – copper . d. Oil - paper.

29- Temperature is a measure of the energy of molecules of a substance.

- a. Kinetic. b. Potential. c. Light. d. Chemical.

30- melting process is the change of substance from state to..... State.

- a. Solid - liquid.
- b. Liquid - gas.
- c. gas- liquid.
- d. Liquid - solid.

31- Evaporation process is the change of substance from state to State.

- a. Solid - liquid.
- b. Liquid - gas.
- c. gas- liquid.
- d. Liquid - solid.

Question 6**Complete the following statements****Unit 1****Concept 1.2**

- 1. Your body should get enough amount of , and**
- 2. The process of getting rid of wastes is called ,**
- 3. The systems responsible for the excretion processes , and**
- 4. By increasing the distance between objects and the Earth's surface the Force**
- 5. Magnets attract some metals, such as , ,**
- 6. Mechanical energy can be changed into energy in the generator**
- 7. Electric wires are coated with or To protect us from the electric shock**
- 8. Electric circuits in houses are connected in way.**
- 9. The urinary system remove wastes products from your**
- 10. performs an important function of the urinary system.**
- 11. One of the most important wastes that the kidneys get rid of is**
- 12. Urea comes from the breakdown of**
- 13. is the process of expelling urine from the body.**

14. is a microscopic unit that filters blood.
15. Function of the system is the secretion of hormones to regulate many processes in the body.
16. hormone regulates the amount of sugar in the blood.
17. In an electric generator: energy is converted from to
18. Energy can neither be nor from nothing.
19. forces keep the stability of objects on the Earth's surface.
20. The area surrounding the magnet is known as
21. Gravity attracts any object that has
22. Wind turbines need to generate electricity.
23. Magnets can be made from
24. The pattern formed by iron filings near a magnet is a diagram of
25. The magnet may or with another magnet.
26. Energy is neither nor nothing.
27. changes mechanical energy into electrical energy.
28. circuit is a closed path for the movement of electric current.
29. Charges moving in a conductor called
30. uses to open and close the electrical circuit
31. Materials are divided in terms of their conductivity of electricity into and
32. is considered one of the components of the circuit that limits the flow of electric current.
33. The electric circuit is connected in or connection.
34. Electrical wires are covered with which is an insulating material.
35. A moving magnet generates inside a coil

Concept 1.3

36. The mutual effect between magnetism and electricity is used in , and

37. To make a pacemaker, we need, an insulated electrical wire and

38. is used for the heart patient.

Concept 2.1

39. The thermal energy of an object depends on

40. The energy that the body acquires because of its movement is the

41. There are three ways of heat transfer , and

42. The state of matter depends on

43. matter consists small units called , which consist of smaller units called

44. milk is a matter in State, which helium is a matter in

45. water has Volume and Shape

46. The speed of ink spread in hot water is its speed in cold water.

47. Reason: Because the hot water molecules move which causes an increase the of its molecules, making it easier to spread the ink.

48. The higher the temperature, the more energy of the material, these increasing the energy of particles of matter and moving with a higher

49. When the material gains thermal energy, the speed of its molecules and from each other and therefore the matter or

50. When the material loses thermal energy, the speed of its molecules and of each other and therefore the matter or

Question 7

What is meant by (Define)

1- Electricity

2- Electric current	
3- Electrically conductive materials	
4- Electrically insulating materials	
5- Serial connection	
6- Parallel connection	
7- Galvanometer	
8- Gravity	
9- Thermal energy	
10- Temperature	
11- melting	
12- Freezing	
13- Evaporation	
14- Condensation	

Question 8

Answer the following questions

1- What the function of each of the following:**a-Battery (dry cell)****b-Switch****c-Copper wires**

.....

2- How does my body work as a system?

Thesystem digests food so that it can be used to provide energy to cells.

Thesystem transports nutrients to all parts of the body.

Thesystem function of the system is to get rid of waste produced by the vital processes that take place inside our bodies.

Waste leaves our bodies in the form of.....,.....and.....

3- What would happen if there is no gravity?

.....

4- Factors affecting gravitational force

.....

5- Have you seen forces other than gravity pulling objects without touching them?

.....

6- Factors affecting magnetic force.

.....

7- How does the size of a magnet affect its ability to attract a piece of iron?

.....

8- Explain how gravity is similar to magnetism.

.....

9- What is the important of a thermostat?

.....

10- Classify the following materials in the table below:

(plastic spoon-piece of glass copper wire - iron nails)

.....

11- Explain how a magnet can generate electricity.

.....

12- How is an electrical circuit considered a system?

.....

13- Explain how temperature affects the movement and speed of particles.

.....

Correct the following statement:

1- A galvanometer is used when large electric currents pass through.

.....

2- The electric switch is the source of electrons that flow through the electrical circuit.

.....

3- A galvanometer is used to measure small masses.

.....

4- Electrical wires are covered with a layer of aluminum because it is an insulating material.

.....

5- The higher the temperature, the slower the particles move.

.....

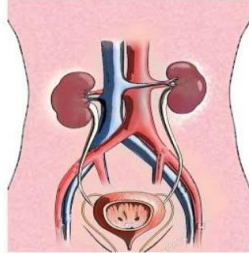
Question 9

Variant questions

1- Complete and the following table:

The term excretion is used only when must pass through a membrane to leave the body.

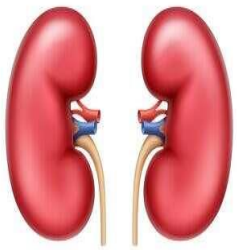
The systems responsible for the excretion process are

.....		
		

When you sweat, waste leave the body through pores in your

During the process of your body gets rid of gas as waste

Removes waste products from your



2- The urinary system

The kidneys: They have a very important role. The kidneys are constantly for and blood, up to times a day.

The kidneys are consist of millions of

Nephrons: are Filters that remove harmful substances from the body,

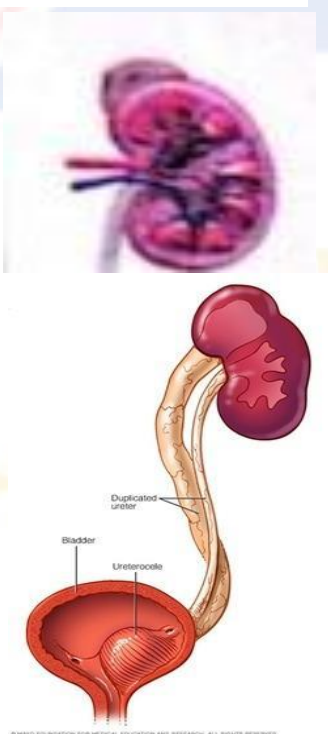
One of the most important waste products eliminated by the kidneys is called

which is comes from the breakdown of

Ureter : tube that connects the kidney to

Urinary bladder: considered as Flexible.

The urethra: is a tube through which is Emptied.



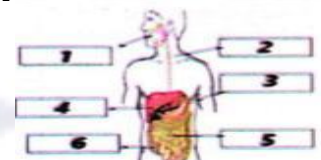
3- Complete the information in the figure in front of you:

What is the number of the organ that

1-The digestion process begins in.....

2- Transparent food from number (1) to (3).....

3 - Secretes digestive fluids consisting of acids and enzymes that break down of food



4- Absorbs digested food.

4- The picture represents a model that simulates the work of the kidney as a blood filtration system.



1-The mixture of beans, rice, salt, and water represents.....

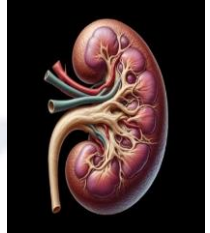
2-The filter and funnel represent

3-The liquid that is filtered in the cup represents

4-How do the kidneys perform their function?

.....

5- Look at the shape of the nephrons in front of you and answer:



1-The get rid of waste process in the kidney is carried out through the process of

2-The nephrons allow the passage of particles, such as and while preventing the passage of particles, such as and

6- match each system to its component:

System	Component
(1) Endocrine	(a) Nephron
(2) Urinary	(b) Alveoli
(3) Circulatory	(c) Pituitary gland
(4) Digestive	(d) Red blood cells

(5) Respiratory

(e) Rectum

7- Notice the picture below and answer the following questions.



- 1- is one of well-known disorders that affect the endocrine system.
- 2- People have this disease cannot make or cannot use it.
- 3- The organ responsible for secreting insulin is
- 4- People with diabetes, the pancreas correctly.
- 5- Blood sugar levels in people with diabetes must be monitored by

8- Notice the picture and answer the Following questions

- 1- is a device attached to the body that regulates blood sugar levels with automatic insulin injections insulin when the body needs it.
- 2- Researchers are now working to develop an
- 3- so that diabetics would not need to connect an external insulin pump.

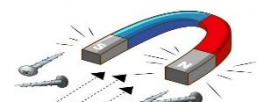


9- What is the component of electric circuit?

- 1- 2-
- 3- 4-



10- Look at the Figure in front of you:



1-What happens when you close a magnet to an iron nail?

The pulls the iron nail when you close

2-Think why that?

3- What happens when you close magnet to another magnet?

↓

..... **force**



In the case of poles, attraction occurs.

Classification of materials according to their attraction to magnets

.....

.....

13- Notice the picture in front of you, which shows one of the ways electricity is generated, then answer the following questions:



1- What are the methods of generating electrical energy?

.....

2- What is a turbine?

.....

3- What types of energy are used in the following turbines to generate electricity?

A-Water turbine

B-Wind turbine

C-Fuel turbine ,

14- The diagram shows the components of an electrical circuit:

Write the name of each component and

(1)

Function:

(2)

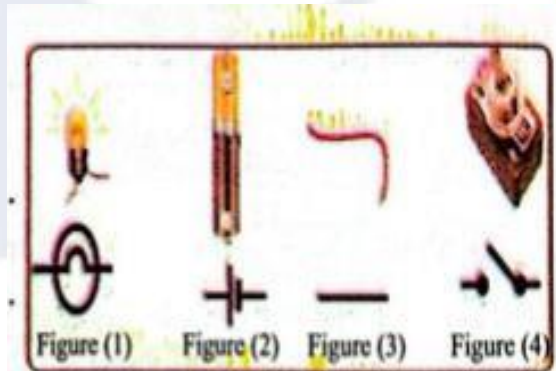
Function:

(3)

Function: allow electrical current flow

(4)

Function:

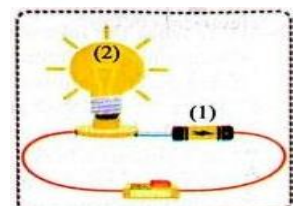


15- In front of you is a picture of an electrical circuit:

1. Number (1) refers to

2. Number (2) refers to

3. Why does the light bulb light up in the circuit shown?



4. Is electricity connected in cities in series or in parallel?
Why?

16- In front of you two electrical circuits with different types of connections:

1- What is the difference between the two circuits?

The first circuit

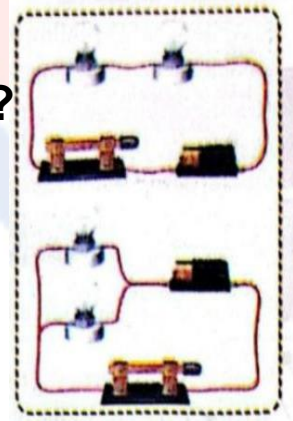
The second circuit

2- What happens when one of the bulbs in each electrical circuit burns out?

The first circuit

The second circuit

3- What are the advantages of using parallel circuits?



17- In front of you is a galvanometer, which is used to measure weak currents.

List two factors that cause the pointer to move quickly and register a higher value.

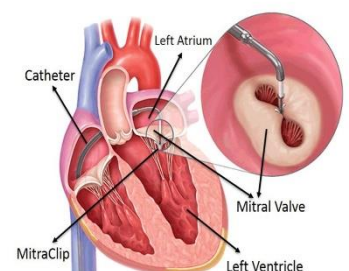


18- look at the picture in front of you:

1-What is the name of the device connected to the heart?

2-What is its importance?

3-How did scientists develop this device?



.....

1- What is the importance of a pacemaker?

.....

2- What do we use to make pacemaker?

.....

3- Why there is an antenna inside the pacemaker?

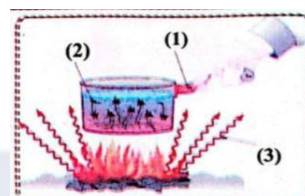
.....

19- Why there is an antenna inside the pacemaker?

Through the opposite figure, show the methods of heat transfer.

(1) (2)

(3)



Question 10

Compare between each the following

- 1- Compare between: conductive and insulating materials, giving examples.**
- 2- Compare between: - Melting and freezing ,Evaporation and condensation.**
- 3- Compare between: Open electrical circuit and closed electrical circuit.**
- 4- Compare: the matter in the liquid, gaseous and solid state.**

Question 1

Put ✓ or ✗ to the following

Unit 1
Concept 1.2

1- The two kidneys remove waste materials from the blood.	✓
2- Nephron helps in the filtration of blood from urea.	✓
3- Urine is expelled outside the body through urethra	✓
4 - Blood cells and proteins are too small, so they can pass through the nephrons of kidneys.	✗
5 - Kidneys considered as a filtering system for the blood	✓
6 - People whose kidneys are not working properly must use other devices to her their blood from waste.	✓
7 – proteins can pass through nephrons during filtration of blood in the two kidneys.	✗
8 – Studying a kidney model can save time, money and effort.	✓
9 – The force of gravity between an object and the Earth increases, when the distance between them increases.	✗
10 - Magnetism is an attraction or a repulsion force, while gravity is a repulsion force only.	✗
11 – The force of gravity appears when any object is thrown upward into the air as it returns back to the Earth's surface.	✓
12 - All materials can be attracted to the magnet.	✗
13 - Cobalt is an example of magnetic materials.	✓
14 - Water in dams is used to operate wind turbines.	✗
15 - The thermostat in a refrigerator contains an automatic switch.	✓
16 - All materials allow electric current to flow through them.	✗
17 - Copper, aluminum and rubber are electric conductors.	✗

18 - All metals are electric insulators.	X
19 - Electric wire can be made of copper and covered with plastic or rubber.	✓
20- Electricity and magnetism can work together.	✓
21 - In the series circuit, the electric current can flow in different branches.	X
22 - The electric device in houses is connected in series circuits.	X
23 - The device that is to detect the electric current is called galvanometer.	✓
24 - By increasing the number of loops in coil and moving a magnet inside it rapidly, the amount of generated electric current will decrease.	X
25 - There is no relation between magnetism and electricity.	X
26 – the natural pacemaker inside our heart produces electrical currents to make it contract.	✓
27 – The natural pacemaker contains a built-in antenna.	X
28 – matter can be changed from one state to another.	✓
29 – Glass can be melted at very low temperature.	X
30 – All matter contains thermal energy.	✓
31 – Heat flows from a hotter substance to a colder substance.	✓
32 – If you hold a hot cup of tea with your hand, heat transfers from your hand to the cup.	X
33 – molecules of solids move faster than molecules of liquid.	X

Question 2

Write scientific term for each of the following ?

Unit 1
Concept 1.2

- 1- The process of converting complex substances into simple substances that the body can use. (Digestion process)
- 2- The process of expelling harmful substances from the body. (Excretion process.)
- 3- A system whose function is to get rid of waste produced by the vital processes that take place inside our bodies. (Excretory system)
- 4- The organ responsible for producing the insulin hormone. (pancreas)
- 5- Device attached to the body that helps diabetics regulates their blood sugar levels. (insulin pump)
- 6- It is a microscopic filter that is found in the two kidneys and filters the blood from waste materials. (Nephron)
- 7- An organ that has a very important function in the excretory system. (Kidney)
- 8 – An substance which is formed due to the breakdown of proteins Inside the body cells (Urea)
- 9- An organ that collects urine inside it. (Urinary bladder).
- 10- A tube that transports urine to the bladder. (Two narrow tubes)
- 11- A disease that occurs as a result of a disorder in the secretion of the insulin hormone. (Diabetes disease)
- 12- It is the process of expelling urine from the body. (Urination process)
- 13- A hormone that regulates the let of sugar in the human blood. (insulin)
- 14- A device that is used diabetics to help regulate the blood sugar levels with automatic injections of insulin. (insulin pump)
- 15 - The force of Earth which attracts all objects on its surface or to its center . (Gravity force)

- 16** - The space around a magnet where its magnetic force appears. (**Magnetic field.**)
- 17** - materials attracted to magnets. (**Magnetic materials**)
- 18** - Materials that are not attracted to magnets. (**Non-magnetic materials**)
- 19** - The device which converts mechanical energy into electrical energy. (**Generator**)
- 20** - The flow of electrons through an electric wire. (**Electric current**)
- 21** - Electrical energy is transferred to electrical devices through (**electrical wire**)
- 22** - The two factors that affect the force of gravity. (**Mass and distance**)
- 23** - A closed loop which electric current can flow through. (**Electric circuit**)
- 24** - A tool which is used to open and close the electric circuit . (**Switch**)
- 25** - An electrical circuit in which all components are connected in a single path. (**Series circuit**)
- 26** - It contains an automatic switch to adjust the temperature inside the refrigerator. (**Thermostat**)
- 27** - A component in the circuit that reduces current flow. (**Electrical resistor**).
- 28** - A type of connection in which the lamps are connected to two different branches. (**Parallel circuit**).
- 29** - material that allows electrons to flow through it easily. (**Electrical conductors**)
- 30** - A device that is inserted into the chest and stimulates the heart muscle to beat at regular intervals. (**Artificial pacemaker**)

31- The materials that allow the electric charges to flow through.
(The electric insulators)

Concept 2.1

32 - A measure of the average kinetic energy of particles in a substance.
(Temperature)

33- The process of converting matter from its solid state to its liquid state
(melting process).

34- The process of converting a substance from a gas to a liquid.
(Condensation process).

35 - The process of converting a substance from a liquid state to a solid state.
(Freezing process).

36- A device used to infer the passage of electric current in a circuit.
(Galvanometer)

37- It is the smallest building unit of matter. (atoms)

38- it is a group of atoms bound together. (molecules)

39- A state of matter that bonding forces between its particles disappears.
(Gas state)

40- The energy that the body gains due to its movement and increases with the speed of the body. (Thermal energy)

41- It is a measure of the average kinetic of molecules and atoms of a substance.
(temperature)

Question 3

Give reason for the following

Unit 1
Concept 1.2

1- Food, water and oxygen are very important for your body.
Because they provide energy, help body growth, and keep all body systems working well

2- The respiratory system plays an important role in the excretion process.

Because it exhales carbon dioxide as waste material through lungs.

3- The digestive process plays an important role in getting energy.

Because it converts complex food to simple food that the body can use for energy.

4- The urinary system has a major role in human life.

Because it removes wastes (urea) from blood through kidney which keeping the blood clean and filter

5- Proteins do not pass through the nephrons.

Because it is too large so it can't pass through nephrons.

6- The excretory systems in the human body are varied.

Because waste materials leave the body in different forms through different systems (skin , respiratory system, urinary system)

7- The kidney has an important function in the urinary system.

Because it filters and cleans the blood 300 times per day by remove wastes (urea)

8- The body systems work together as one system.

Because all systems work together with integrated ways and each system depends on others systems to do its function

9- The importance of the endocrine system in the human body.

Because it secretes hormones that control body temperature and blood pressure and helps body to fight in dangerous situations .

10- An insulin pump is important for a diabetic.

Because it provides the right amount of insulin to control the blood sugar level

11- Importance of excretion process to your body.

Because the excretory system collects by waste materials produced by cells and remove them from body to keep the body healthy.

12- The two kidneys contain many nephrons.

To filter blood and remove harmful substances from the body.

13- Generators are used in electrical power stations.

Concept 1.3

Because it convert mechanical energy into electrical energy.

14- Why the electric lamp connected to a battery does not light up when there is cutting in the connecting wire.

because the electric circuit must be closed to flow the electric current.

15- Gravity and magnetism differ from other forces.

Because gravity has pulling force only while magnetic have pulling and pushing force

16- The thermostat has a role in electrical appliances.

Because it adjusts the temperature in some devices such as refrigerators

17- Parallel connection is better than series connection.

Because it connects with more than path and if one device stops working, the others devices remain work

18- Many countries are interested in building power stations.

Because they provide enough electricity for homes, schools and factories

19- There is a mutual effect between magnetism and electricity.

Because electricity can produce magnetism, and magnetism can produce electricity.

20- The electric circuit is connected as a system.

Because the electric circuit is a path for electricity that consis of many components that work together.

21- Cobalt and nickel are considered as magnetic materials.

Because they are attracted to the magnet.

22- wood and copper are not attracted to the magnet.

Because they are Non-Magnetic Materials.

23- All metals are considered as electric conductors

Because it allow electrical current to flow easily

24- A human is exposed to an electric shock when touching an uninsulated wire through which an electric current is passing.

Because body contains a lot of water which is good conductor of electricity .

25- Electric generators play an important role in our life.

Because it can generate electricity by converting kinetic energy to electrical energy.

26- The human body is considered as an electric conductor

Because it compose a lot of water and it is good electrical conductor

27- The amount of heat energy of molten wax is greater than that of solid wax.

Concept 2.1

Because the molecules of solids are not moving fast as liquid so solid wax has less thermal energy.

28- Thermal energy varies depending on the type of material.

Because there are different materials (thermal conductors and thermal insulators)

29- You feel cold when you hold an ice cube in your hand.

Because Thermal energy transfer from your hand to ice

30- you hold a hot cup in your hand.

You feel hot because heat transfers from hot cup to your hand.

31- There are different methods of heat transfer.

Because heat transfer in different ways: by conduction, convection, and radiation.

32- The amount of heat energy of an object and the amount of its kinetic energy depends on the velocity of its particles.

velocity of its particles. Because when the velocity of particles increases the kinetic energy and heat of objects increases

33- The color of food spreads in hot water faster.

Because hot water has more thermal energy and more kinetic energy.

34- The boiling point and melting point are from the physical properties of each material.

Because they help to identify substances which each substance has certain boiling and melting points

Question 4

What happens if

Unit 1
Concept 1.2

1- Urine collects in the bladder .

The bladder stores the urine then expelled it through urethra.

2- Undigested food collects in the large intestine.

Large intestine will absorb water from it to leave the body as solid feces

3- Your body doesn't get rid of waste materials.

The body will get sick.

4- the body is unable to secrete enough insulin or use it

The body will be infected with diabetes disease.

5- The distance between an object and the center of the Earth increases.

Gravity will decrease.

Concept 1.3

6- The switch in the electrical circuit is opened.

The electric circuit open and electrical currents cannot flow so device will off.

7- A magnet is close to the end of the plastic ruler.

The magnet will not attract to plastic Because it is Non-magnetic materials.

8- The distance between the object and the center of the Earth decreases.

The gravity will increase.

9- The mass of the object increases (in relation to gravity).

Gravity will increase

10- The switch in the electrical circuit is closed.

The electric current will flow.

11- A glass rod is placed in an electrical circuit containing a switch, a battery, and a light bulb.

The light bulb does not work because glass is an electrical insulator.

12- A piece of aluminum is placed in an electrical circuit containing a switch, a battery, and a light bulb.

The light bulb works because aluminum is electrical conductors

13- Increasing the number of copper wire coils in an electromagnet.

The amount of generated electric current will increase

14- one of the components of the electrical circuit is removed or damaged.

The electrical current will not flow.

15- A rubber thread is used instead of a metal wire in the electrical circuit.

The electrical current not flow, because rubber electrical insulators.

16- Electrical wires are covered with aluminum foil.

The electrical shock will happen due to aluminum foil is electrical conductor

17- electrical circuits in the home are connected in series.

All devices will connect in one loop so when one of them turns off the others turn off also

18- A person's heartbeat is irregular or slow.

This person needs to Artificial pacemaker to help heart muscle to beat at regular intervals

19- The mass of an object decreases. (according to the force of gravity)

The force of gravity will decrease

20- The distance between an object and Earth's center increases. (according to the force of gravity)

The force of gravity will decrease.

21-The electric circuit doesn't contain a switch.

We can't open or close the electric circuit easily.

22- A person touches non-insulated electric wire through which an electric current pass

He will suffer from electric shock

23- The state of glass when it is heated at very high temperatures.

Concept 2.1

It will change from solid state to liquid state

24- two objects of the same temperature contact each other.

The heat will not transfer

25- Adding two equal amounts of food colors in hot water and in cold water

The food colors spread quickly in hot water.

26- To the particles of matter when they reach freezing point.

Their thermal energy decreases ,and the force that holds them together increase ,so they will vibrate more slowly and get closer to each other

Question 5

Choose the correct answer

Unit 1
Concept 1.2

1- Urination process happens by the help of the.....system

a. digestive. **b. urinary.** c. respiratory. d. Skeletal

2- Diabetes disease occurs due to a disorder in one organ of..... system.

a. respiratory. b. Nervous. **c. endocrine.** d. Urinary

3- The organ which responsible for secreting insulin hormone is the

a. gallbladder. **b. Pancreas** c. Liver d. stomach

4- Insulin hormone is responsible for regulating the level of in blood.

a. proteins. b. Fats c. Water. **d. sugar**

5- people who suffer from diabetes can use the insulin pump device that injects the body automatically with

- a. sugar b. water **c. insulin.** d. carbohydrates.

6- The of an object and its from the Earth's surface affect the gravity force.

Concept 1.3

- a. mass-color. b. distance-mass.
c. mass-distance d shape-distance

7- Magnets can be made of

- a. copper. b. glass. **c. iron.** d. plastic.

8- is a magnetic material that is attracted to the magnet.

- a. Copper. **b. Nickel** c. Pape d. Wood

9- All the following materials are called magnetic materials, except

- a . Iron. **b . Plastic.** c. Nickel. d. Steel .

10- Generators convert energy to energy.

- a. Chemical- thermal. b. thermal-sound.
c. Sound- mechanical **d. mechanical -electrical**

11- The flow of electric charges along a closed path is known as

- a . electric wire. b. light energy
c. electric current. d. sound energy

13 - are used to spin the magnet in the generator to produce electricity.

- a. Water and winds.** b. Light and sound.
c. Electricity and sound. d. Sound and heat

14- Wind turbines need to produce electricity

- a. water force. b. electric force
c. gravity force. **d. generators**

15- The source of electricity in an electric circuit is a

- a. metal wire b. switch **c. battery.** d. Light bulb.

16- The electric circuit contains a which is responsible for opening and closing the circuit.

- a. battery **b. Switch.** c. Light bulb. d. heated

17- All the following materials are considered as electrical conductor except

- a. Copper b. Water. **c. rubber** d. Aluminium

18- the automatic internal switch on a is used in the refrigerator to adjust its temperature.

- a. battery **b. Thermostat.**
c. Light bulb. d. Wall socket

19- A magnetic field can be formed when an electric current flow around

- a. plastic core b. battery
c. metal core d. rubber core

20- are used to stop the flow of electricity

- a. Batteries. b. Electric conductors
c. Electric insulators. d. Galvanometers

21- In a the electric current can flow through different branches

- a. Parallel circuit only.** b. Electric circuit only
c. resistors. d. Series and parallel circuits

22- A Is used to slow the flow of an electric current in the electric circuit.

- a. Battery b. switch. **c. resistor** d. Lamp

23- Scientists use a To detect the flow of electric currents.

- a. Generator **b. galvanometer.** c. battery d. Switch

d. batteries

d. Liver

Concept 2.1

d. hands

d. Compounds.

d. Oil - paper.

d. Chemical.

d. Liquid - solid.

d. Liquid

Question 6

Complete the following statements

Unit 1
Concept 1.2

- 1- Your body should get enough amount of **food** , **water** and **oxygen**
- 2- The process of getting rid of waste is called **excretion process**.
- 3- The systems responsible for the excretion processes **excretory system** , **respiratory system** and **skin**
- 4- By increasing the distance between objects and the Earth's surface the **gravitational Force decreases**.
- 5- Magnets attract some metals, such as **iron, nickel, Cobalt**.
- 6- Mechanical energy can be changed into **electrical** energy in the generator
- 7- Electric wires are coated with **plastic** or **rubber** To protect us from the electric shock
- 8- Electric circuits in houses are connected in **parallel** way.
- 9- The urinary system removes wastes products from your **kidney**
- 10- **Kidney** performs an important function of the urinary system.
- 11- One of the most important wastes that the kidneys get rid of is **urea (urine)**
- 12- Urea comes from the breakdown of **proteins**
- 13- **Urination** is the process of expelling urine from the body.
- 14- **Nephrons** is a microscopic unit that filters blood.
- 15- Function of the **endocrine** system is the secretion of hormones to regulate many processes in the body.
- 16- **insulin** hormone regulates the amount of sugar in the blood.
- 17- In an electric generator: energy is converted from **kinetic** to **electrical energy**
- 18- Energy can neither be **created** nor **destroyed** from nothing.

Concept 1.3

- 19- **gravity** forces keep the stability of objects on the Earth's surface.
- 20- The area surrounding the magnet is known as **magnetic field**
- 21- Gravity attracts any object that has **mass**
- 22- Wind turbines need **wind** to generate electricity.
- 23- Magnets can be made from **Iron**
- 24- The pattern formed by iron filings near a magnet is a diagram of **magnetic field**
- 25- The magnet may **attract** or **repel** with another magnet.
- 26- There are two factors that affect the gravitational forces, **mass** and **distance**
- 27- **generator** changes mechanical energy into electrical energy.
- 28- **electric** circuits are a closed path for the movement of electric current.
- 29- Charges moving in a conductor called **electrons**
- 30- **switches** uses to open and close the electrical circuit
- 31- Materials are divided in terms of their conductivity of electricity into **electrical conductors** and **electrical insulators**.
- 32- **resistors** is considered one of the components of the circuit that limits the flow of electric current.
- 33- The electric circuit is connected in **series** or **parallel** connection.
- 34- Electrical wires are covered with **plastic** which is an insulating material.
- 35- A moving magnet generates **electricity** inside a coil
- 36- The mutual effect between magnetism and electricity is used in **electrical motor** , **electrical generator** and **electrical transformer**
- 37- To make a pacemaker, we need **battery**, an insulated electrical wire and **motherboard**

- 38- **Artificial pacemaker** is used for the heart patient.
- 39- The thermal energy of an object depends
1. on **movement of particles of matter**
- 40- The energy that the body acquires because of its movement is the **kinetic Energy**.
- 41- There are three ways of heat transfer **conduction** , **convection** and **radiation**
- 42- The state of matter depends on **speed of particles**.
- 43- matter consists small units called **molecules** , which consist of smaller units called **atoms**
- 44- milk is a matter in **liquid** State, which helium is a matter in **gas**
- 45- water has **fixed** Volume and **Variable** Shape
- 46- The speed of ink spread in hot water is **faster** its speed in cold water. Reason: Because the hot water molecules move **quickly** which causes an increase the **kinetic energy** of its molecules, making it easier to spread the ink.
- 47- The higher the temperature, the more **thermal** energy of the material, these increasing the **kinetic** energy of particles of matter and moving **faster** with a higher **speed**
- 48- When the material gains thermal energy, the speed of its molecules **increase** and **move away** from each other and therefore the matter **changed** or **expand**
- 56- When the material loses thermal energy, the speed of its molecules **decrease** and **get close** of each other and therefore the matter **changed** or **contracts**

Question 7

What is meant by (Define)

Electricity

energy come from of electrical charge moving a long electrical conductor

Electric current

it is flow of electric charge in closed path

Electrically conductive materials	materials allow electric current to flow easily.
Electrically insulating materials	material does not allow electric current to flow easily.
Serial connection	all components of circuit connected in single loop
Parallel connection	All components connected in two or more different loop
Galvanometer	A device used to infer the passage of electric current in a circuit
Gravity	is force that affected everything which has mass
Thermal energy	Of a substance is the total sum of the kinetic energy of its molecules and atoms.
Temperature	It is a measure of average kinetic energy of molecules and atoms of molecules.
melting	It is the change of state matter from solid state to liquid state.
Freezing	It is the change of matter from liquid state to solid state.
Evaporation	It is the change of state matter from liquid state to gas state
Condensation	It is the change of state matter from gas state to liquid from gas state to liquid.

Question 8

Answer the following questions

1- What the function of each of the following:**a-Battery (dry cell)****b-Switch****c-Copper wires****a – it is source of electricity.****b – open and close electric circuit.****d – electric conductor wire allows electric current to flow.**

2- How does my body work as a system?

1-The **digestive** system digests food so that it can be used to provide energy to cells.

2-The **Circulatory** system transports nutrients to all parts of the body.

3-The **excretory** system function of the system is to get rid of waste produced by the vital processes that take place inside our bodies.

4-Waste leaves our bodies in the form of **urine** , **sweat** and **Co₂**

3- What would happen if there is no gravity?

Everything on Earth planet will float into space because gravity hold everything on earth .

4- Factors affecting gravitational force

1) mass 2) distance

5- Have you seen forces other than gravity pulling objects without touching them?

Yes, magnetism force.

6- Factors affecting magnetic force.

(1) Distance from the Magnet (2) magnetic field strength

7- How does the size of a magnet affect its ability to attract a piece of iron?

When size of magnet increase, the attraction force increase.

8- Explain how gravity is similar to magnetism.

1)Both of them force

2)We cannot see both but we observe their effected.

3)They both effect on object without direct contact .

9- What is the important of a thermostat?

It is automatic switch which adjusts temperature inside refrigerator.

10- Classify the following materials in the table below:

(plastic spoon-piece of glass copper wire - iron nails)

Magnetic materials	Non-magnetic materials
Iron nails	Plastic spoon

..... **Glass , copper, wire**

1- Explain how a magnet can generate electricity.

In generator when magnet spins around coil wire it generates electricity

2- How is an electrical circuit considered a system?

Because it consists of many components work to together as one system

3- Explain how temperature affects the movement and speed of particles.

When temperature increases, thermal energy kinetic energy increases so particles move faster

Correct the following statement:

1- A galvanometer is used when large electric currents pass through. **Small**

2- The electric switch is the source of electrons that flow through the electrical circuit. **Battery**

3- A galvanometer is used to measure small masses.

Electric currents

4- Electrical wires are covered with a layer of aluminum because it is an insulating material. **Plastic**

5- The higher the temperature, the slower the particles move. **Lower**

Question 9

Variant questions

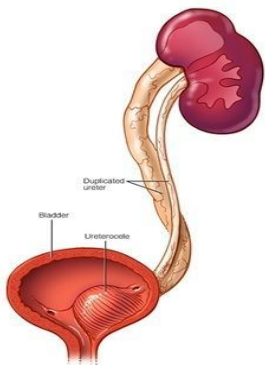
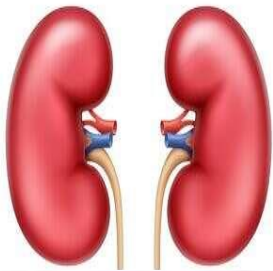
1- Complete and the following table:

The term excretion is used only when **wastes** must pass through a membrane to leave the body.

The systems responsible for the excretion process are

Skin	Respiratory system	Urinary system
		

When you sweat, waste leave the body through pores in your skin	During the process of exhalation your body gets rid of carbon dioxide gas as waste	Removes waste products from your kidneys
--	--	---



2- The urinary system

The kidneys: They have a very important role. The kidneys are constantly for **clean** and **filter** blood, up to **300** times a day.

The kidneys are consist of millions of **microscopic filter**

Nephrons: are **microscopic** Filters that remove harmful substances from the body, One of the most important waste products eliminated by the kidneys is called **urea**

which is comes from the breakdown of **proteins**
Ureter : **two slender** tube that connects the kidney to **bladder**

Urinary bladder: considered as **muscular** Flexible.
The urethra: is a tube through which is **urine** Emptied.

Urination: the process of excreting **urine** from the

3- Complete the information in the figure in front of you:

- What is the number of the organ that ...

1- The digestion process begins in (1 **mouth**)

2- Transparent food from number (1) to (3) (2 **esophagus**)

3- Secretes digestive fluids consisting of acids and enzymes that break down of food (3 **stomach**)

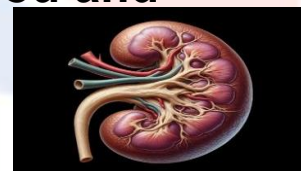
4- Absorbs digested food. (5 **Small intestine**)

4- The picture represents a model that simulates the work of the kidney as a blood filtration system.



- 1- The mixture of beans, rice, salt, and water represents **Unfiltered blood**
- 2-The filter and funnel represent **kidney**
- 3-The liquid that is filtered in the cup represents **filtering blood**
- 4-How do the kidneys perform their function?
By filtering and cleaning blood 300 times per day.

5- Look at the shape of the nephrons in front of you and answer:



- 1-The get rid of waste process in the kidney is carried out through the process of **excretion**
- 2-The nephrons allow the passage of **small** particles, such as **water** and **salt** while preventing the passage of **large** particles, such as **proteins** and **Blood cells**

6- Match each system to its component:

System	Component
(1)Endocrine	(a) Nephron
(2)Urinary	(b) Alveoli
(3)Circulatory	(c) Pituitary gland
(4)Digestive	(d) Red blood cells
(5)Respiratory	(e) Rectum

Answer 1- c 2- a 3- d 4- e 5- b

7- Notic the picture below and answer the following questions.

1 – **Diabetes disease** is one of will-known disorders that affect the endocrine system.

2- People who have this disease cannot make **insulin hormone** or cannot use it.



3- The organ responsible for secreting insulin is **pancreas**

4- People with diabetes, the pancreas **does not function** correctly.

5- Blood sugar levels in people with diabetes must be monitored by **not allowing it to get too low or to high**

8- Notices the picture and answer the Following questions

1 – **insulin pump** is a device attached to the body that regulates blood sugar levels with automatic insulin injections when the body needs it.

2- Researchers are now working to develop an **Artificial pancreas** so that diabetics would not need to connect an external insulin pump.



9- What is the component of electric circuit?

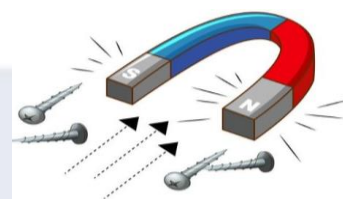
1-Metal wire. 2-Source of electricity (battery)
3-Switch. 4-electrical device



10- Look at the Figure in front of you:

1-What happens when you close a magnet to an iron nail?

The **magnet** pulls the iron nail when you close it without **touching**



2-Think why that? **Magnetism force allows magnets to attract certain materials such as iron.**

11- Look at the Figure:

1- The images represent the magnetic field, which is **area** at surrounds the magnet and shows effect of **magnetism**



2- The pattern formed by iron filings near a magnet is known as **magnetic field**

3- What happens when you close magnet to another magnet?

The magnet will attract another magnet in different poles and will repel when in similar poles

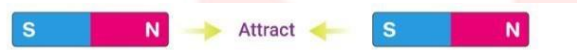
12- When one magnet close to another magnet the following occurs



Pushing force



pulling force



In the case of **similar** poles, repulsion occurs.

In the case of **different** poles, attraction occurs.

Classification of materials according to their attraction to magnets

Non-magnetic materials.

These are the materials that

Not attracted to

Magnetic materials.

These are the materials that

are attracted to magnet

13- Notice the picture in front of you, which shows one of the ways electricity is generated, then answer the following questions:

1- What are the methods of generating electrical energy? **Winds by wind turbines.**

2- What is a turbine? **Wind turbines.**

3- What types of energy are used in the following turbines to generate electricity?

A-Water turbine **water energy**

B-Wind turbine **wind energy**

C-Fuel turbine **coal, oil**



14- The diagram shows the components of an electrical circuit:

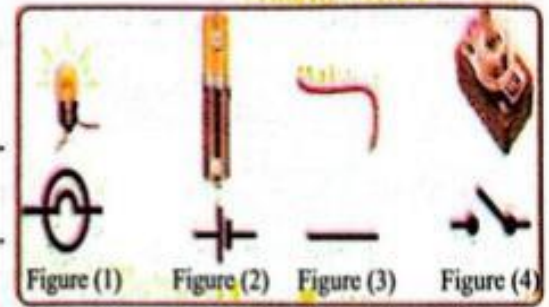
A. Write the name of each component and its function:

(1) **lamp (electrical device)**

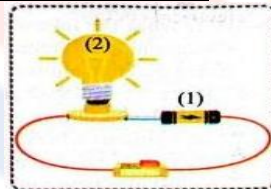
Function: **make lighting**

(2) BatteryFunction: **source of electricity****(3) wire**

Function: allow electrical current flow

(4) switchFunction: **open and close electrical circuit.**

15- In front of you is a picture of an electrical circuit:

1- Number (1) refers to **battery**2- Number (2) refers to **lamb**

3- Why does the light bulb light up in the circuit shown?

Because it is closed circuit so the electrical current can flow.

4- Is electricity connected in cities in series or in parallel?

Why?

Parallel way – to can operate different devises at same times.

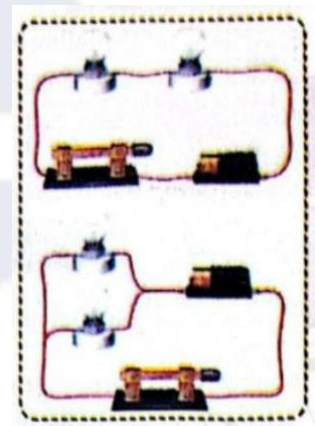
16- In front of you two electrical circuits with different types of connections:

1-What is the difference between the two circuits? The first circuit **series circuit.**The second circuit **parallel circuit.**

2-What happens when one of the bulbs in each electrical circuit burns out?

The first circuit **other light bulbs will turn off**The second circuit **other light bulbs will remain work**

3-What are the advantages of using parallel circuits?

Can be operate devices in same time so use at homes.

17- In front of you is a galvanometer, which is used to measure weak currents.

List two factors that cause the pointer to move quickly and register a higher value.

Increase speed of magnet**Increase number of loops in coil**

18- Look at the picture in front of you:

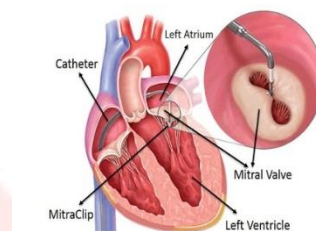
1-What is the name of the device connected to the heart? **Artificial pacemaker**

2-What is its importance?

Help heart muscle to beat regular

3-How did scientists develop this device?

Become smaller in size and Insert in simple surgery .



1- What is the importance of a pacemaker?

Help heart muscle to beat regular

2- What do we use to make pacemaker?

1) battery. 2) insulated electric wire. 3) motherboard.

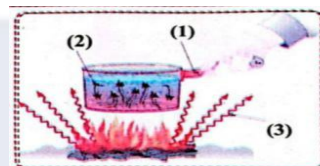
3- Why there is an antenna inside the pacemaker?

To send information to doctors

19- Through the opposite figure, show the methods of heat transfer.

(1) conduction (2) convection

(3) Radiation



Question 10

Compare between each the following

1-Compare between: conductive and insulating materials, giving examples.

Conductive materials	insulating materials
such as iron and copper	such as rubber and plastic

2- Compare between: - Melting and freezing ,Evaporation and condensation.

Melting	freezing.	Evaporation	condensation.
Process which changes solid state into liquid state	Process which changes liquid state	Process which changes liquid state into gas state	Process which changes gas state into liquid state

	into solid state		
--	-------------------------	--	--

3-Compare between: Open electrical circuit and closed electrical circuit.

Open electrical circuit	closed electrical circuit.
The switch is open and the electrical current cannot flow through the circuit so device is off	The switch is closed and the electrical current can flow through the circuit so device is on

4-Compare: the matter in the liquid, gaseous and solid state.

gaseous state.	liquid state.	solid state.
More thermal energy	Moderate thermal energy	less thermal energy

مراجعات النخبة

حمل الآن

مجاناً وحصرياً

المراجعة رقم (5)

اختبار شهر نوفمبر



[1] Choose the correct answer:

1. When your eyes see danger, they send a signal to your

- a. muscles b. brain c. stomach d. lungs

2. When you get nervous, there is an interaction between your and systems.

- a. circulatory-urinary b. skeletal-urinary
c. nervous-urinary d. nervous-circulatory

3. Thepumps more blood to feed the body muscles to move.

- a. heart b. brain c. stomach d. lungs

4. All the following may occur while being nervous, except

- a. perspiring b. calming down
c. stomach aches d. the increase in heart rate.

5. Cells differ from each other in

- a. sizes only b. neither shapes nor sizes
c. shapes only d. shapes and sizes

6. The muscle is considered as

- a. a cell b. a tissue c. an organ d. a system

7. Among the organs of musculoskeletal system are

- a. muscles and bones of arm b. muscles of arm and heart c.
bones and heart d. lungs and heart

8. When the muscles in front of the upper arm relax and the muscles in back of the upper arm contract, the forearm moves

- a. up towards your shoulder b. down towards your shoulder
c. up away from your shoulder d. down away from your shoulder

9. The contraction of muscles moves the bones in Only

- a. one direction
- b. two directions
- c. three directions
- d. four directions

10. Cardiac muscles are type of involuntary muscles which form the

- a. stomach
- b. intestine
- c. lungs
- d. heart

11. Among the muscles which you can't control their movement are

- a. hand muscles
- b. eyelid muscles
- c. leg muscles
- d. arm muscles

12. Among the organs which contain both involuntary and voluntary muscles is the

- a. heart
- b. arm
- c. eye
- d. leg

13. Among the functions of endocrine system is

- a- transmitting food to the nervous system
- b. controlling the body temperature and blood pressure
- c. controlling the muscles of stomach
- d. providing the muscular system with its needed food

14. Circulatory system can transport all the following substances through all the body parts except

- a. nutrients
- b. hormones
- c. bones
- d. gases

15. All the following are from types of blood vessels, except.....

- a. arteries
- b. heart
- c. veins
- d. blood capillaries

16. The lungs take in air when the diaphragm, while they release the air when the diaphragm

- a. contracts-contracts
- b. contracts-relaxes
- c. relaxes-contracts
- d. relaxes-relaxes

17. All the following muscles work in pairs as one muscle contracts, while the other muscle relaxes, except the

- a. upper arm muscles
- b. cardiac muscles
- c. neck muscles
- d. forearm muscles

18. The system of the human body gets their needed energy from

- a. the sun
- b. the water
- c. food
- d. carbon dioxide

19. You can use your muscles to help the teeth chew the food

- a. eye
- b. cardiac
- c. jaw
- d. hard

20. Walls of small intestine contain Which responsible for absorbing nutrients of digested food.

- a. blood vessels
- b. glands
- c. hairs
- d. nephron

21. The blood which carries the waste materials enters each kidney through a large

- a. vein
- b. artery
- c. blood capillary
- d. ureter

22. Urea is formed due to breaking down of inside the body cells.

- a. carbohydrates
- b. fats
- c. acids
- d. proteins

23. All the following are responsible for excretion process, except.....

- a. digestive system
- b. skin
- c. respiratory system
- d. urinary system

24. The two kidneys remove waste materials as and expel them in the form of urine.

- a. water and urea
- b. urea and blood cells
- c. water and proteins
- d. proteins and blood cells

25. Engineers design special devices to work instead of organ which filters the blood from waste materials.

- a. stomach
- b. heart
- c. kidney
- c. lung

26. When we throw a ball upward, it returns back to the Earth due to.....

- a. gravity only
- b. magnetism only
- c. electricity and mass
- d. magnetism and electricity

27. Gravity and magnetism are similar in that.....

- a. they are repulsion forces only
- b. they are attraction forces only
- c. they are forces that attract all objects
- d. we can't see them

28. Magnets can be made of

- a. copper
- b. glass
- c. iron
- d. plastic

29. All the following materials are called magnetic materials, except

- a. iron
- b. plastic
- c. nickel
- d. steel

30. When we put a piece of aluminum foil close to a magnet, it will

- a. be attracted to the magnet
- b. be a magnet
- c. not attract to the magnet

31. is a magnetic material that is attracted to the magnet.

- a. copper
- b. iron
- c. gold
- d. wood

32. Mechanical energy is converted into energy in the generators.

- a. light
- b. sound
- c. electric
- d. thermal

33. are used to spin the magnet in the generator to produce electricity.

- a. water and winds
- b. light and sound
- c. electricity and sound
- d. sound and heat

34. The source of electricity in any electric circuit may be

- a. a metal wire
- b. a switch
- c. a battery
- d. an electric lamp

35. All the following materials are considered as electric conductors, except...

- a. copper b. aluminum c. iron d. rubber

36. is a material that can't allow electric current to flow through.

- a. copper b. iron c. plastic d. cobalt

37. The electric wires can be made of or

- a. wood-plastic b. rubber-wood
c. aluminum-copper d. plastic-rubber

38. The electric wires are covered with as it is

- a. copper-good conductor of electricity b. iron-strong material
c. plastic-bad conductor of electricity d. plastic-electric conductor

39. All the following materials are electric insulators, except

- a. rubber b. plastic c. wood d. steel

40. Which of the following is a poor conductor of electricity and is used to coat wires?

- a. a conductor b. non insulator c. a switch d. a battery

[2] Write scientific term:

1. They are cells in the form of long fibers to allow movement.	(.....)
2. The system which helps the body to move.	(.....)
3. They are muscles that attached to the bones of skeletal system	(.....)
4. It is the organ which contracts and relaxes to help in the movement of the body.	(.....)
5. It is the process of expelling urine from the body.	(.....)
6. The system that responsible for excretion of carbon dioxide gas.	(.....)

7. An organ in which absorption of nutrients starts.	(.....)
8. The system which converts the complex food into simpler substances that the body can use to get energy.	(.....)
9. The organ which absorbs most of water from the undigested food.	(.....)
11. The organ which helps in excretion of sweat through the pores that are found in it.	(.....)
12. It is a microscopic filter that is found in the two kidneys and filters the blood from waste materials.	(.....)
13. The materials that attracted to the magnet.	(.....)
14. The materials that are not attracted to the magnet.	(.....)
15. A device inserted in chest to stimulate heart to beat regularly.	(.....)
16. A muscle in human body that beat to push blood inside the body.	(.....)

[3] Put (v) or (X):

1. When you start to run faster, there is an interaction between your heart and muscles.	()
2. Muscles don't need energy to contract.	()
3. Every system in the body works individually when exposed to danger.	()
4. A group of different tissues can form a system.	()
5. Muscle cells are in the form of long fibers to allow movement.	()
6. The forearm moves up towards your shoulder when the muscle in front of the upper arm contracts.	()
7. Saliva is a liquid which is secreted by endocrine system inside your mouth.	()
8. The digested food enters the colon as a soupy mixture.	()
9. Glycogen is converted into glucose and stored in liver and muscles.	()
10. Inside large intestine, enzymes which are secreted inside stomach lead to more breaking down of food.	()
11. All nutrients that are absorbed from small intestine are stored as fats inside the body.	()

12. Kidneys are considered as filtering system for the blood.	()
13. People whose kidneys are not working properly must use other devices to filter their blood from wastes.	()
14. Proteins can pass through nephrons during filtration of blood in the two kidneys.	()
15. Studying a kidney model can save time, money, and effort.	()
16. The two kidneys remove waste materials from undigested food which come out in the form of urine.	()
17. Electricity and magnetism can work together.	()
18. The force of gravity increases between objects when the distance between them increases.	()
19. During the falling down of an object towards Earth's surface, the gravity force increases.	()
20. Cobalt is an example of magnetic materials.	()
21. We can use the magnet to separate between some iron nails mixed with small pieces of copper.	()
22. Magnets attract the non-magnetic materials.	()
23. Electricity can be produced from magnetism.	()
24. Water in dams are used to operate wind turbines.	()
25. To make electric current flow through a circuit, all components must be connected to each other.	()
26. The electric circuit must contain a source of electricity such as the switch.	()
27. The thermostat in a refrigerator contains an automatic switch.	()
28. Moving magnet inside a coiled wire can generate electricity.	()
29. The relation between magnetism and electricity is used in electric generators to generate electricity.	()
30. In the series circuit the electric current flows in one path only.	()
31. If one device is disconnected in parallel circuit, all other device will not work.	()
32. Electric circuits in houses are connected in parallel.	()
33. The heart is important in our body as it helps in digestion.	()
34. Scientists use an artificial pacemaker to stimulate heart to beat regularly.	()
35. The artificial pacemaker should contain a battery to do its function.	()

[4] Give reasons for:

1. The muscles that surround the eyeball are considered as voluntary muscles.

.....

2. Cardiac muscles contract and relax without stopping.

.....

3. Saliva plays an important role in digestion of food.

.....

4. Blood cells and proteins can't pass through the kidney's nephrons.

.....

5. Electric wires are made of copper.

.....

6. Resistors are used to slow the flow of electrons through the electric circuit.

.....

7. The importance of nervous system for the muscles of heart.

.....

8. Muscle cells are in the form of long fibers.

.....

9. The body needs to convert complex food into simpler substance.

.....

10. Importance of excretion process to the body.

.....

11. The importance of nervous system for the muscles of heart.

.....

12. Diabetics must give themselves regular shots of insulin.

.....

13. The electric circuit is considered as a system.

.....

14. When a ball is thrown into the air, it will stop moving upward and then falls down.

.....

15. Cobalt and nickel are considered as magnetic materials.

.....

16. Wood and copper are not attracted to the magnet.

.....

17. The electric circuit must contain a battery.

.....

18. All metals are considered as electric conductors.

.....

19. Most electric wires are covered with rubber or plastic.

.....

20. The heart has a natural pacemaker.

.....

[5] What happens to:

1. The human body when the heartbeats increase during danger.

.....

2. The lungs when the diaphragm muscle contracts.

.....

3. The force of gravity if the mass of an object increases.

.....

[6] What happens if:

1. Your body doesn't get rid of waste.
.....
2. Large magnets spin at a high speed, around coiled wires.
.....
3. The electric circuit does not contain switch.
.....
4. Pancreas doesn't make its function correctly.
.....
5. Saliva is not secreted during chewing the food inside your mouth.
.....
6. A magnet is approached close to some iron nails mixed with small pieces of paper.
.....
7. Rubber is used in making electric wires instead of copper.
.....
8. Electric circuits in houses are connected in series.
.....

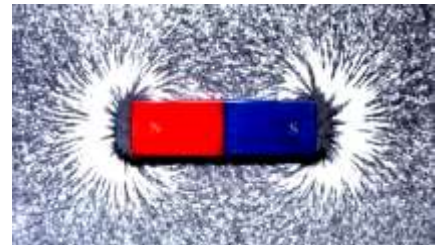
[6] Complete:

1. The body consists of a group of.....which consists of a group of organs.
2. Bundles of muscle tissues are organized to form the.....
3. Musculoskeletal system consists of two systems which are.....system and.....system.
4. The food we eat contains different nutrients such asand.....
5. Blood cells andarein size, so they cannot pass through nephrons, and stay in the body.
6. Blood which carries waste materials reach the kidney through a large
7. Cells can use sugar at once to get their needed energy, and this sugar can be converted into. and stored in liver and

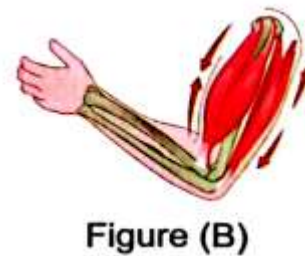
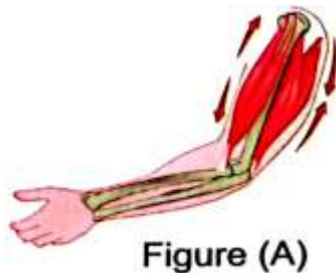
8. People whose kidneys are not working well, their Can't be filtered.
9. Some substances can pass through nephrons as,while other substances can't pass through nephrons as
10. The microscopic filtered which are found inside the two kidneys are called
11. Waste materials that are removed by the help of a unary system are coming out in the form of
12. Materials that don't conduct electricity are called
13. Materials that conduct electricity are called.....
14. One of the components of electric circuit that limits the flow of electric current is called.....

[7] Look at the following diagram and complete:

- 1- The tool is surrounded by area called
- We can observe the force of this tool by using which make pattern around it.



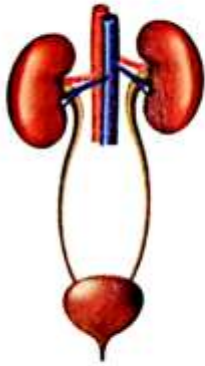
2-



- The forearm in figure moves up towards your shoulder.
- The forearm in figure moves down away from your shoulder.
- The muscles in front of the upper arm contract in figure and relax in figure
- The muscles in the back of the upper arm contract in figure and relax in figure

[8] Write each of the following organs below the system that belongs to:

(Heart - Lungs - Kidneys - Stomach)



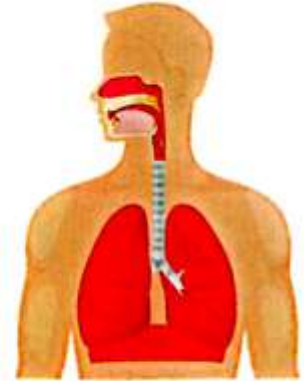
1.



2.



3.



4.

[1] Choose the correct answer:

1. When your eyes see danger, they send a signal to your

- a. muscles **b. brain** c. stomach d. lungs

2. When you get nervous, there is an interaction between yourand systems.

- a. circulatory-urinary b. skeletal-urinary
c. nervous-urinary **d. nervous-circulatory**

3. Thepumps more blood to feed the body muscles to move.

- a. **heart** b. brain c. stomach d. lungs

4. All the following may occur while being nervous, except

- a. perspiring **b. calming down**
c. stomach aches d. the increase in heart rate.

5. Cells differ from each other in

- a. sizes only b. neither shapes nor sizes
c. shapes only **d. shapes and sizes**

6. The muscle is considered as

- a. a cell b. a tissue **c. an organ** d. a system

7. Among the organs of musculoskeletal system are

- a. muscles and bones of arm** b. muscles of arm and heart
c. bones and heart
d. lungs and heart

8. When the muscles in front of the upper arm relax and the muscles in back of the upper arm contract, the forearm moves

- a. up towards your shoulder b. down towards your shoulder
c. up away from your shoulder **d. down away from your shoulder**

9. The contraction of muscles moves the bones in.....Only

- a. **one direction**
- b. two directions
- c. three directions
- d. four directions

10. Cardiac muscles are type of involuntary muscles which form the

- a. stomach
- b. intestine
- c. lungs
- d. **heart**

11. Among the muscles which you can't control their movement are

- a. hand muscles
- b. **eyelid muscles**
- c. leg muscles
- d. arm muscles

12. Among the organs which contain both involuntary and voluntary muscles is the

- a. heart
- b. arm
- c. **eye**
- d. leg

13. Among the functions of endocrine system is

- a- transmitting food to the nervous system
- b. **controlling the body temperature and blood pressure**
- c. controlling the muscles of stomach
- d. providing the muscular system with its needed food

14. Circulatory system can transport all the following substances through all the body parts except

- a. nutrients
- b. hormones
- c. **bones**
- d. gases

15. All the following are from types of blood vessels, except.....

- a. arteries
- b. **heart**
- c. veins
- d. blood capillaries

16. The lungs take in air when the diaphragm....., while they release the air when the diaphragm

- a. contracts-contracts
- b. **contracts-relaxes**
- c. relaxes-contracts
- d. relaxes-relaxes

17. All the following muscles work in pairs as one muscle contracts, while the other muscle relaxes, except the

- a. upper arm muscles
- b. cardiac muscles
- c. neck muscles
- d. forearm muscles

18. The system of the human body gets their needed energy from

- a. the sun
- b. the water
- c. food
- d. carbon dioxide

19. You can use your..... muscles to help the teeth chew the food

- a. eye
- b. cardiac
- c. jaw
- d. hard

20. Walls of small intestine contain..... Which responsible for absorbing nutrients of digested food.

- a. blood vessels
- b. glands
- c. hairs
- d. nephron

21. The blood which carries the waste materials enters each kidney through a large

- a. vein
- b. artery
- c. blood capillary
- d. ureter

22. Urea is formed due to breaking down ofinside the body cells.

- a. carbohydrates
- b. fats
- c. acids
- d. proteins

23. All the following are responsible for excretion process, except.....

- a. digestive system
- b. skin
- c. respiratory system
- d. urinary system

24. The two kidneys remove waste materials as and expel them in the form of urine.

- a. water and urea
- b. urea and blood cells
- c. water and proteins
- d. proteins and blood cells

25. Engineers design special devices to work instead of..... organ which filters the blood from waste materials.

- a. stomach
- b. heart
- c. kidney
- d. lung

26. When we throw a ball upward, it returns back to the Earth due to.....

- a. gravity only
- b. magnetism only
- c. electricity and mass
- d. magnetism and electricity

27. Gravity and magnetism are similar in that.....

- a. they are repulsion forces only
- b. they are attraction forces only
- c. they are forces that attract all objects
- d. we can't see them

28. Magnets can be made of

- a. copper
- b. glass
- c. iron
- d. plastic

29. All the following materials are called magnetic materials, except

- a. iron
- b. plastic
- c. nickel
- d. steel

30. When we put a piece of aluminum foil close to a magnet, it will

- a. be attracted to the magnet
- b. be a magnet
- c. not attract to the magnet

31.....is a magnetic material that is attracted to the magnet.

- a. copper
- b. iron
- c. gold
- d. wood

32. Mechanical energy is converted intoenergy in the generators.

- a. light
- b. sound
- c. electric
- d. thermal

33.....are used to spin the magnet in the generator to produce electricity.

- a. water and winds
- b. light and sound
- c. electricity and sound
- d. sound and heat

34. The source of electricity in any electric circuit may be

- a. a metal wire
- b. a switch
- c. a battery
- d. an electric lamp

35. All the following materials are considered as electric conductors, except...

- a. copper b. aluminum c. iron **d. rubber**

36.....is a material that can't allow electric current to flow through.

- a. copper b. iron **c. plastic** d. cobalt

37. The electric wires can be made of or

- a. wood-plastic b. rubber-wood
c. aluminum-copper d. plastic-rubber

38. The electric wires are covered with as it is

- a. copper-good conductor of electricity b. iron-strong material
c. plastic-bad conductor of electricity d. plastic-electric conductor

39. All the following materials are electric insulators, except

- a. rubber b. plastic c. wood **d. steel**

40. Which of the following is a poor conductor of electricity and is used to coat wires?

- a. a conductor **b. insulator** c. a switch d. a battery

[2] Write scientific term:

1. They are cells in the form of long fibers to allow movement.	(.....muscles cells)
2. The system which helps the body to move.	(musculoskeletal system
3. They are muscles that attached to the bones of skeletal system	(...skeletal muscles..)
4. It is the organ which contracts and relaxes to help in the movement of the body.	(...muscles..)
5. It is the process of expelling urine from the body.	(.....urination)
6. The system that responsible for excretion of carbon dioxide gas.	(...respiratory system ..)

7. An organ in which absorption of nutrients starts.	(...small intestine
8. The system which converts the complex food into simpler substances that the body can use to get energy.	(...digestive system.....)
9. The organ which absorbs most of water from the undigested food.	(...large intestine
11. The organ which helps in excretion of sweat through the pores that are found in it.	(...skin.....)
12. It is a microscopic filter that is found in the two kidneys and filters the blood from waste materials.	(...nephron.....)
13. The materials that attracted to the magnet.	(...magnetic material
14. The materials that are not attracted to the magnet.	(non- magnetic material ..)
15. A device inserted in chest to stimulate heart to beat regularly.	(...artificial pacemaker..)
16. A muscle in human body that beat to push blood inside the body.	(...heart

[3] Put (✓) or (X):

1. When you start to run faster, there is an interaction between your heart and muscles.	(✓)
2. Muscles don't need energy to contract.	(X)
3. Every system in the body works individually when exposed to danger.	(X)
4. A group of different tissues can form a system.	(X)
5. Muscle cells are in the form of long fibers to allow movement.	(✓)
6. The forearm moves up towards your shoulder when the muscle in front of the upper arm contracts.	(✓)
7. Saliva is a liquid which is secreted by endocrine system inside your mouth.	(✓)
8. The digested food enters the colon as a soupy mixture.	(✓)
9. Glycogen is converted into glucose and stored in liver and muscles.	(X)
10. Inside large intestine, enzymes which are secreted inside stomach lead to more breaking down of food.	(X)
11. All nutrients that are absorbed from small intestine are stored as fats inside the body.	(X)

12. Kidneys are considered as filtering system for the blood.	(√)
13. People whose kidneys are not working properly must use other devices to filter their blood from wastes.	(√)
14. Proteins can pass through nephrons during filtration of blood in the two kidneys.	(X)
15. Studying a kidney model can save time, money, and effort.	(√)
16. The two kidneys remove waste materials from undigested food which come out in the form of urine.	(X)
17. Electricity and magnetism can work together.	(√)
18. The force of gravity increases between objects when the distance between them increases.	(X)
19. During the falling down of an object towards Earth's surface, the gravity force increases.	(√)
20. Cobalt is an example of magnetic materials.	(√)
21. We can use the magnet to separate between some iron nails mixed with small pieces of copper.	(√)
22. Magnets attract the non-magnetic materials.	(X)
23. Electricity can be produced from magnetism.	(√)
24. Water in dams are used to operate wind turbines.	(X)
25. To make electric current flow through a circuit, all components must be connected to each other.	(√)
26. The electric circuit must contain a source of electricity such as the switch.	(X)
27. The thermostat in a refrigerator contains an automatic switch.	(√)
28. Moving magnet inside a coiled wire can generate electricity.	(√)
29. The relation between magnetism and electricity is used in electric generators to generate electricity.	(√)
30. In the series circuit the electric current flows in one path only.	(√)
31. If one device is disconnected in parallel circuit, all other device will not work.	(X)
32. Electric circuits in houses are connected in parallel.	(√)
33. The heart is important in our body as it helps in digestion.	(X)
34. Scientists use an artificial pacemaker to stimulate heart to beat regularly.	(√)
35. The artificial pacemaker should contain a battery to do its function.	(√)

[4] Give reasons for:

1. The muscles that surround the eyeball are considered as voluntary muscles.
.....Because you can control the movement of eyeball Muscles.....
2. Cardiac muscles contract and relax without stopping.
.....to allow the heart pumps the blood carrying oxygen to all body cells.....
3. Saliva plays an important role in digestion of food.
.... Because saliva can easily Soften The food and Start The chemicals break down of food...
4. Blood cells and proteins can't pass through the kidney's nephrons.
.....Because They are large in Size.....
5. Electric wires are made of copper.
.....Because it is an electric conductor that allow electric current to flow through.....
6. Resistors are used to slow the flow of electrons through the electric circuit.
.....To avoid the damage of its Components.....
7. The importance of nervous system for the muscles of heart.
.....Because nervous system controls the movement of muscles of heart.....
8. Muscle cells are in the form of long fibers.
.....To allow the movement.....
9. The body needs to convert complex food into simpler substance.
..... Because the body cells use this simpler substance to get energy and grow.
10. Importance of excretion process to the body.
.....Because the excretory system collects the waste materials produced from burning food inside the body cells.....
11. The importance of nervous system for the muscles of heart.
..... Because nervous system controls the movement of muscles of heart
12. Diabetics must give themselves regular shots of insulin.
.....to regulate the sugar level in blood.....

13. The electric circuit is considered as a system.
..... Because the electric circuit is a path for electricity that consists of many components that work together as one system
14. When a ball is thrown into the air, it will stop moving upward and then falls down.
..... Due to the gravity force of Earth
15. Cobalt and nickel are considered as magnetic materials.
..... Because they are attracted to the magnet
16. Wood and copper are not attracted to the magnet.
..... Because they are non-magnetic materials
17. The electric circuit must contain a battery.
..... Because the battery is the source of electricity in the electric circuits
18. All metals are considered as electric conductors.
..... Because they allow electric current to flow through them easily
19. Most electric wires are covered with rubber or plastic.
..... Because rubber and plastic are bad conductors of electricity to protect people from electric shock
20. The heart has a natural pacemaker.
..... To creates electrical currents that is sends out through the heart, causing the heart to contract

[5] What happens to:

1. The human body when the heartbeats increase during danger.
..... The heart pumps more blood to the muscles, the heart and other organs and also the blood pressure increases.
2. The lungs when the diaphragm muscle contracts.
.....the lungs take in the air rich in oxygen gas.....
3. The force of gravity if the mass of an object increases.
..... The force of gravity will increase

[6] What happens if:

1. Your body doesn't get rid of waste.
.....the body will get sick
2. Large magnets spin at a high speed, around coiled wires.
..... The spinning Magnets create electrical charges on the coiled wires, so electricity is produced.
3. The electric circuit does not contain switch.
..... we can't open or close the circuit
4. Pancreas doesn't make its function correctly.
..... The person will be infected with diabetes disease
5. Saliva is not secreted during chewing the food inside your mouth.
.....the food can not be easily soften and chemical breakdown will not happen
6. A magnet is approached close to some iron nails mixed with small pieces of paper.
..... The magnet will attract the iron nails but it will not attract the small pieces of paper ...
7. Rubber is used in making electric wires instead of copper.
..... The electric current will not flow through the wire
8. Electric circuits in houses are connected in series.
.....if one light bulb blows out or disconnected ,the other one will not work.....

[6] Complete:

1. The body consists of a group of.....systemswhich consists of a group of organs.
2. Bundles of muscle tissues are organized to form the.....muscle.....
3. Musculoskeletal system consists of two systems which are.....muscularsystem and.....skeletal system.
4. The food we eat contains different nutrients such asfats....and...protein.....
5. Blood cells andprotein.....aretoo largein size, so they cannot pass through nephrons, and stay in the body.
6. Blood which carries waste materials reach the kidney through a largeartery
7. Cells can use.....glucosesugar at once to get their needed energy, and this sugar can be converted into.glycogen..... and stored in liver andmuscles.....

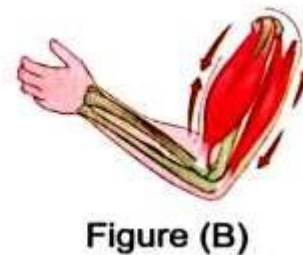
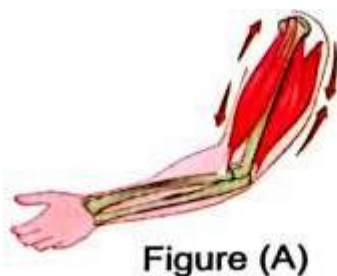
8. People whose kidneys are not working well, their.....bloodCan't be filtered.
9. Some substances can pass through nephrons as.....urea,while other substances can't pass through nephrons as ...protein
10. The microscopic filtered which are found inside the two kidneys are called....nephron....
11. Waste materials that are removed by the help of a unary system are coming out in the form ofurine.....
12. Materials that don't conduct electricity are calledelectric insulators
13. Materials that conduct electricity are called.....electric conductors
14. One of the components of electric circuit that limits the flow of electric current is called.....resistors

[7] Look at the following diagram and complete:

- 1- The tool is surrounded by area called ...magnetic field.....
- We can observe the force of this tool by using ...iron filings..... which make pattern around it.

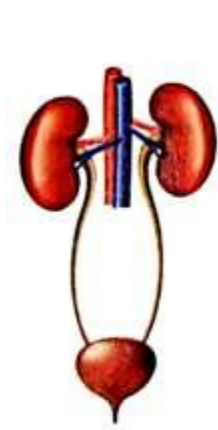


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- The forearm in figure.....B.....moves up towards your shoulder.
- The forearm in figure....A.....moves down away from your shoulder.
- The muscles in front of the upper arm contract in figure.....B.....and relax in figureA.....
- The muscles in the back of the upper arm contract in figure.....A.....and relax in figureB.....

[8] Write each of the following organs below the system that belongs to:
(Heart – Lungs – Kidneys – Stomach)



1.
Kidneys



2.
Heart



3.
Stomach



4.
Lungs

حمل الآن

مجاناً وحصرياً

المراجعة رقم (6)

اختبار شهر نوفمبر



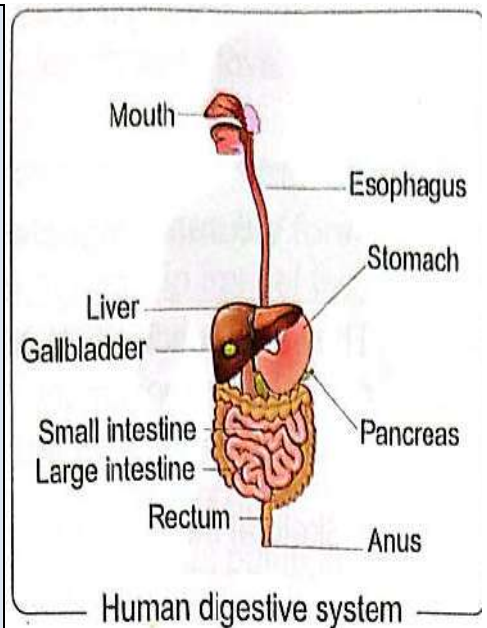
Concept 1.2

4) Digestive system

- ❖ Digestive system is the system that converts complex food into simpler substances that the body can use for energy and growth through process called digestion process.
- ❖ Some of the simpler substances are used inside the cell in cellular respiration process.
- ❖ Complex food contains different nutrients such as carbohydrates, fats and proteins.
- ❖ Nutrients that are produced from digestion process are transported through circulatory system to different organs.
- ❖ Cells can use some nutrients such as glucose sugar at once to get their needed energy.
- ❖ Some nutrients are stored as sugars and fats as following:
 - 1) Glucose sugar can be converted into a storage substance called glycogen and stored in liver and muscles.
 - 2) Liver and muscles can convert glycogen into glucose sugar again when body need energy as in dangerous situations.

Steps of digestion process

Mouth	➤ The digestion begins in mouth. ➤ Jaw muscles help teeth to chew food into smaller parts. ➤ During chewing, saliva softens (moistens) the food and starts the chemical breakdown of food. ➤ Saliva: is a liquid contains enzymes (chemicals) and is secreted by endocrine system in mouth.
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Stomach	➤ After swallowing food, muscles push it into esophagus then to stomach. ➤ The continuous churning movement of stomach and secreting the digestive fluids (that contain an acid and some enzymes) inside stomach allow more food breakdown.
Small intestine	➤ Pancreas and gallbladder secrete enzymes that help in chemical breakdown of food once it moves to small intestine. ➤ The walls of the small intestine absorb digested food (nutrients) through blood vessels to carry them to all body parts.
Large intestine (Colon)	➤ Undigested food is passed to colon as soupy mixture. ➤ Colon absorbs more water from undigested food that become solid mass called feces or stool. ➤ Stool is stored inside rectum until it leaves the body through anus (a muscular opening at the end of rectum).

5) Excretory system

- ❖ Excretory system is responsible for storing and getting rid of waste materials produced from cells.
- ❖ Excretion process: is the process of collecting and removing the waste products resulting from burning food inside the body cells through their membranes.
- ❖ If the body doesn't get rid of wastes, it will get sick.
- ❖ Excretion process occurs by 3 parts of the body which are:
 - 1) Skin.
 - 2) Respiratory system.
 - 3) Urinary system.

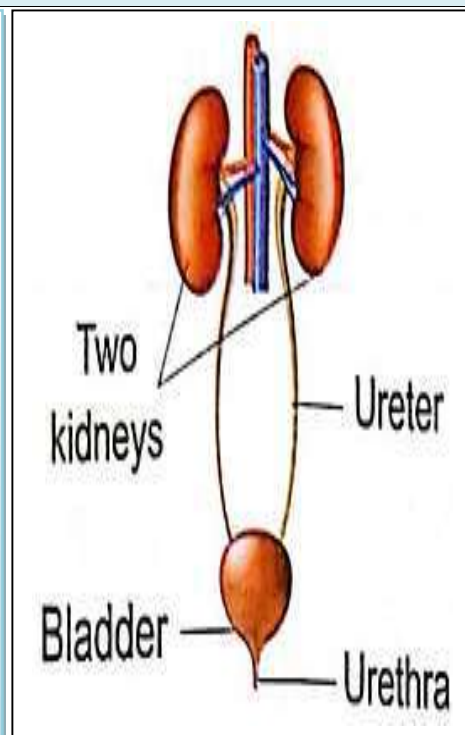
1) Skin	Helps in excretion of wastes in the form of sweat through pores in the skin.
2) Respiratory system	Helps in excretion of carbon dioxide gas during exhalation.
3) Urinary system	Removes waste materials from the blood in the form of urine.

Human urinary system

- ❖ Human urinary system consists of:
 - 1) Two Kidneys. 2) Two Ureters. 3) Bladder. 4) Urethra.
- ❖ Kidneys are considered as a filtering system of the blood.
- ❖ **Urea**: is one of the most important wastes that removed by kidney and formed due to breakdown of proteins inside the body cells.

Kidneys	➤ The blood which carries the wastes enters each kidney through a large artery. ➤ Kidney contains many nephrons (a microscopic filter) that clean and filter the blood up to 300 times a day to remove harmful materials from the body. ➤ After filtration, urine is formed from urea, water and other waste materials.
Ureters	The narrow tubes that transport urine from kidneys to bladder.
Bladder	Urine is collected and stored in bladder until it is expelled out of the body.
Urethra	The tube from which urine is expelled out of the body.

- ❖ **Urination**: is the process of expelling urine out of the body.
- ❖ Blood cells and proteins are too large to pass through the nephron so they stay in the blood.
- ❖ Engineers design special devices for people whose kidneys are not working properly to work instead of kidney organ.
- ❖ Studying a kidney model instead of a real kidney save time, money and effort and can save people's life.

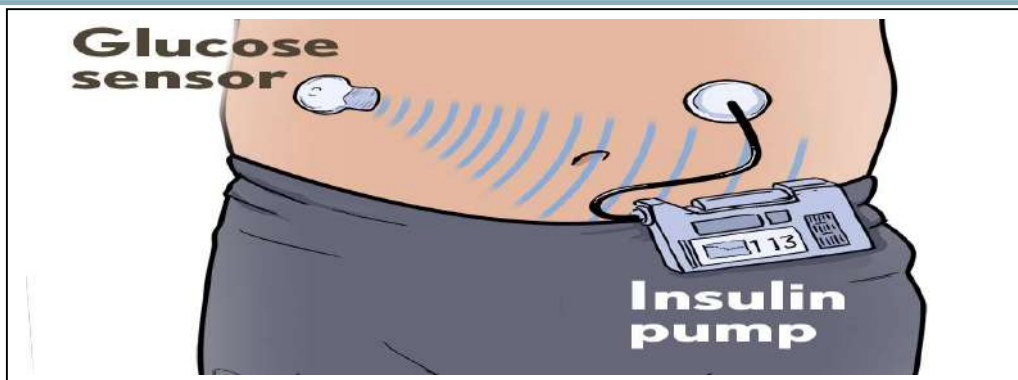


Diabetes disease

- ❖ Diabetes disease is one of the disorders of the endocrine system.
- ❖ Pancreas is one of the organs of the endocrine system that produce insulin hormone.
- ❖ Insulin hormone regulates the level of sugar in the blood that the body can use for energy.
- ❖ If Pancreas doesn't do its function properly, person will be infected with diabetes disease where:
 - 1) Person will be unable to make or use insulin.
 - 2) Sugar stays in the blood causing many problems.
- ❖ Infected people must monitor the level of blood sugar and not allow it to get too low or too high.

❖ Technology to treat diabetes:

- Diabetics can control the blood sugar level by:
 - 1) Taking regular shots (doses) of insulin.
 - 2) Using insulin pump device which is attached to the body and automatic injects the body with insulin (external pump).
 - 3) Researchers now are working to develop an artificial pancreas, which will be internal organ that pumps insulin as needed.



Unit 1: What is a System?

Concept 3: Energy as a System

Gravity and Magnetism

- ❖ Gravity and magnetism are forces that affect us every day.
- ❖ Gravity and magnetism are forces that are similar as following:
 - 1) Gravity and magnetism are different from other forces because it isn't necessary for objects to come into contact with one another to get affected by gravity and magnetism.
 - 2) We cannot see them, but we can observe their effects on objects.
- ❖ Gravity and magnetism are different also from each other as following:

First: Gravity

- ❖ Gravity (gravitational force): is a force that affects everything which has mass.
- ❖ Gravity is always downward pulling force.
- ❖ There are two factors that affect the force of gravity:
 - 1) Distance: As the distance between objects and the center of the Earth increases, the gravitational force decreases.
 - 2) Mass: As the mass of the object increases, the gravitational force increases.
 - Earth has great mass compared to everything located on its surface, so all objects on or near Earth's surface are pulled toward its center.
- ❖ We can't see gravity, but we can observe its effect on objects in the following:
 - 1) Gravity holds you to the ground.
 - 2) When you throw a ball into the air, it will stop moving upward at a certain point and fall back to Earth due to gravity.

Second: Magnetism

- ❖ Magnets are made of iron and other materials and has a force called "magnetism" or (magnetic force).
- ❖ Magnetism is considered as:
 - 1) A pulling force: when it attracts objects or another magnet.
 - 2) A pushing force: when it repels another magnet.
- ❖ Magnetism attracts certain materials only, so materials are classified according to their ability to be attracted to the magnet into 2 types:

Magnetic materials	Non-magnetic materials
They are materials that are attracted to the magnet.	They are materials that are not attracted to the magnet.
Examples: some metals only, such as iron, nickel and cobalt.	Examples: Aluminum, plastic, copper, paper and wood.

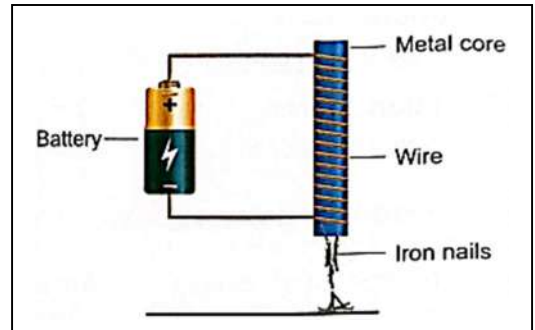
- ❖ Magnetism affects (attracts) magnetic objects that are locate at the magnetic field of the magnet.
- ❖ Magnetic field: is the area around the magnet in which its magnetic force appears.
- ❖ We can't see the magnetic field, but we can only observe its effect by using iron filings as following:
- ❖ Magnet attracts some iron filings that are in its magnetic field.
- ❖ The pattern that the iron filings make near the magnet is the outline of its magnetic field.

Electricity and Magnetism

- ❖ Electricity (electrical energy) and magnetism (magnetic energy) can work together as following:
 - 1) Magnetism can be produced from Electricity.
 - 2) Electricity can be produced from magnetism.

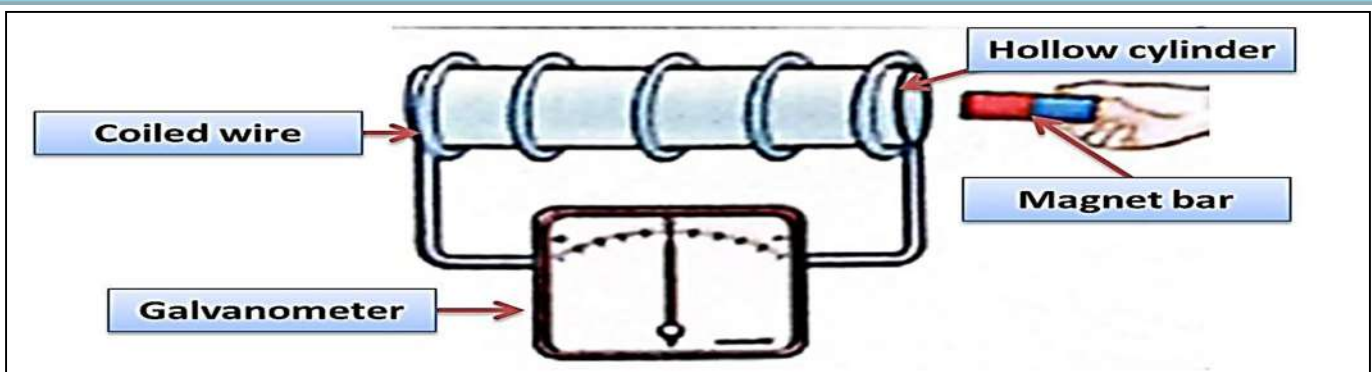
First: Electricity generates Magnetism

- ❖ When an electric current (electricity) flows through a wire wrapped around a metal core, it forms a magnetic effect "magnetic field" around the wire, so the metal core attracts the iron nails.



Second: Magnetism generates Electricity

- ❖ Electricity can be generated (produced) in many different ways.
- ❖ A moving magnet inside a coiled wire can generate electricity.
- ❖ Scientist can detect the flow of small electric currents by galvanometer.
- ❖ The needle of the galvanometer did not move when there is no electric current (voltage) flow.
- ❖ The needle of the galvanometer moved to one side when there is an electric current flow.
- ❖ When the magnet was placed at rest away from the coil no electric current flow.
- ❖ When the magnet was moved toward and into the coil an electric current flow.
- ❖ By increasing the number of loops in the coil, and increasing the movement of a magnet inside it, the amount of generated electric current will increase, so the needle of the galvanometer moved rapidly.
- ❖ Note: The relation between magnetism and electricity is used in electric motor, electric generator and electric transformer.



Electric generator

- ❖ The relation between magnetism and electricity is used in electric generators to generate electricity.
- ❖ Structure of generator: It consists of large magnets and coiled wires.
- ❖ Function: It changes mechanical energy (kinetic energy) into electrical energy used in lighting houses and operating electrical devices.
- ❖ When large magnets spin at a high speed, the spinning magnets create electrical charges on the coiled wires, so electricity is produced.
- ❖ There are different forces that can be used to make the magnets in the generator spin to generate electricity such as:
 - 1) Water in dams is used to operate water turbines.
 - 2) Wind is used to operate wind turbines.
 - 3) Sources of fuel such as oil and coal are used to make water boil producing steam which causes the magnet in the generator to spin.

Electricity

- ❖ Electricity: is a form of energy that transfers to the devices that are powered by electricity (such as light bulbs) through wires.
- ❖ The flow of electricity through wires is known as "electric current".
- ❖ Electric current: It is the flow of electric charges called "electrons" through an electric wire in a steady stream.
- ❖ Materials can be classified according to electrical conduction into:

Electric conductors	Electric insulators
They are materials that allow electric current to flow through.	They are materials that don't allow electric current to flow through.
Known as "good conductors of electricity"	Known as "bad conductors of electricity".
Examples: 1) All metals such as coin, copper and aluminum. 2) Water.	Examples 1) Rubber. 2) Plastic. 3) Cloth.

- ❖ **Importance of insulators**: they stop the flow of electricity, so they keep you safe from getting shocked.
- ❖ Most electric wires are coated with rubber or plastic which are bad conductors of electricity, to protect people from the electric shock.
- ❖ The electric current cause electric shock in the human body as it contains a lot of water that is good conductor of electricity.
- ❖ Electric shock may cause death.

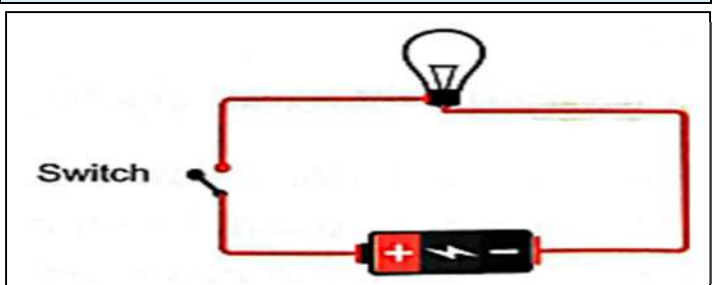
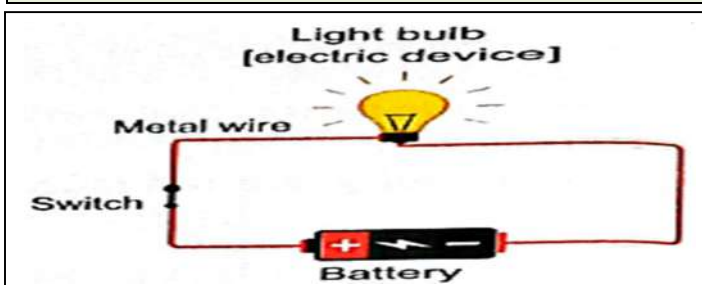
Electric circuit

- ❖ **Electric circuit**: is a path for transmitting an electric current.
- ❖ **Components of the electric circuit**: electric circuits considered as a system because they consist of many components that work together as one system to conduct electricity such as: source of electricity, switch, metal wire and an electric device.

1) Source of electricity	a) Wall socket : transfers electric current from power lines connected to the building. b) Battery .
2) Switch	➤ The most common tool to open and close the circuit: ➤ <u>There are 2 types of switch</u> : 1) Manual : such as a wall switch for lights. 2) Automatic : such as the internal switch on a thermostat, that adjusts the temperature inside devices (refrigerator).

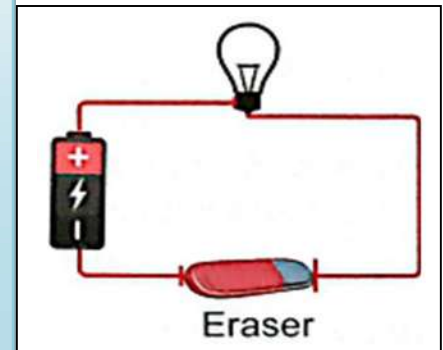
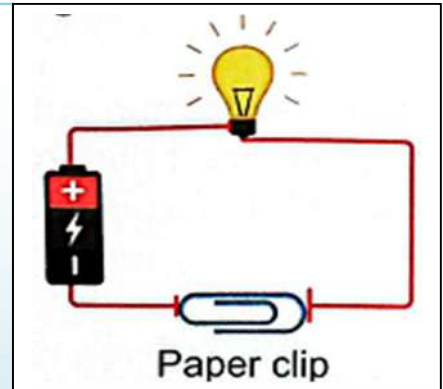
❖ The electric circuits may be:

Closed electric circuits	Opened electric circuits
Switch is closed (turned on).	Switch is opened (turned off).
Electric current flows through the circuit.	Electric current doesn't flow through the circuit.



❖ Notes:

- 1) When an electric conductor (such as coin, aluminum foil or paper clip) is inserted into the circuit electricity will flow and the lamp lights.
- 2) When an electric insulator (such as rubber, small piece of wood, plastic or piece of cloth) is inserted into the circuit electricity will not flow and the lamp doesn't light.
- 3) If you wrap an electric conductor with electrical tape (which is made of plastic) and insert it again in the circuit, the lamp in the circuit will not light because the electric current cannot flow through the plastic.



❖ Example of electric circuits:

- 1) Electrical poles that support electric wires between cities.
- 2) The wires inside walls.

❖ Towns and cities are part of an electric circuit, where:

- 1) The energy source is the power plant which has generators that push out electricity.
- 2) Then electricity travels along conductors called power lines into all kinds of electrical devices in houses, businesses and factories.

Resistors

- ❖ They are components of an electric circuit that limit the flow of electric current.
- ❖ Resistors can be found in some devices (such as toasters – microwaves – electric stoves) to slow the flow of electrons through an electric circuit to avoid the damage of the components of the circuit.

Connection of electric circuits

❖ The electric circuit can be connected in two different ways:

- 1) Series way (Series circuits).
- 2) Parallel way (Parallel circuits).

Series circuits	Parallel circuits
All the components must be connected in a single loop (one path).	The light bulbs are connected in two or more different branches.
The electric current can only flow along one path.	The electric current can flow along different parallel branches (more than one path).
If one light bulb blows out or disconnected, the other one will not work.	If one light bulb turn off or removed, the other light bulb will remain lit.
	

❖ Advantage to use parallel circuits:

- Parallel circuits are found in houses, so we can operate electric devices all at the same time.
- If we turn off one of the devices, the others will continue to work.

Pacemaker

- ❖ The heart has a natural pacemaker which creates electrical currents causing the heart to contract.
- ❖ Artificial pacemaker: is a device that operates with a battery inserted into the chest and stimulates the heart muscle to beat at regular intervals for patients who have slow or irregular heartbeats.
- ❖ The artificial pacemaker contains a built-in antenna to send information to physicians, so they know the condition of the heart.
- ❖ Pacemaker contains battery, insulated electric wire and motherboard.

حمل الآن

مجاناً وحصرياً

المراجعة رقم (7)

اختبار شهر نوفمبر



جميع الأسئلة المقالية من التقييات
"Give Reason"

Unit 1 (excretory system)

1- The respiratory system plays an important role in excretion process.

↳ Because it helps the body to get rid of Carbon dioxide gas (waste material).

2- The kidneys are very important in excretion process. >

• The kidneys has an important function in urinary system

نفس الدجابه

↳ Because they clean and filter the blood from wastes (urea).

3- The urinary system has a major role in human life.

↳ Because it removes waste materials from the blood in the form of urine.

4- The kidneys act as a filter in the urinary system.

↳ Because they contain nephrons which filter the blood from wastes.

5- proteins don't pass through nephrons.

↳ Because they are too large.

6- the urinary bladder play an important role in urinary system.

↳ Because it stores urine until expelling it out through urethra.

(2)

7- The excretory system in human body is varied.

→ Because excretory system include

- skin to get rid of sweat.
- respiratory system to get rid of Carbondioxide gas.
- urinary system to get rid of wastes from the blood.

8- An insulin pump is important for diabetic.

→ Because it regulates the sugar level in the blood with automatic injections of insulin.

What happen

1- Urine collects in the bladder.

→ It will leave the body through urethra by urination process.

2- The body is unable to secrete enough insulin or use it.

→ The body will get diabetes disease.

3- "What the statment refer to"

1- The process of eliminating wastes from the body & the process of expelling harmful wastes from the body. (Excretion process).

2- The system whose function is to get rid of wastes produced by vital process inside our bodies. (Excretory system).

3- A system that work to get rid of dissolved wastes from the blood. (Urinary system)

4- Microscopic units that filter blood. (Nephrons).

(3)

5- An organ has very important role in excretory system.
(Kidneys).

6- One of most important wastes that kidneys work to get rid of.
(Urea).

7- A process after is completed urea, other wastes and water become urine.
(urination process).

8- A tube that transport urine out of the body.
(Urethra).

9- An organ that collect urine inside it (urinary bladder).

10- A disease that occurs as a result of disorder in secretion of insulin.
(diabetes disease).

11- The organ responsible for secretion of insulin hormone (pancreas).

كان فيه سؤالين في الاسبوع ال 6
عن درس digestive system نعرفهم
احتياطي ١-

* Give reason:-

the digestive process plays an important role in getting energy.

↳ Because digestive process converts complex substance into simpler substance (nutrients) to help the body to get energy.

The body systems work together as one system.

↳ Because all systems depend on each other to do their function and work together in integrated way.

(4)

Unit 1 concept 3

1. Give reason

1. The electric lamp connected to a battery doesn't light up when there is cutting in conducting wire.

→ Because this circuit becomes open so the electric current will not flow through it.

2. Human is exposed to an electric shock when touching an uninsulated wire when an electric current is passing.

→ Because human body contains water which is a good conductor of electricity.

3. Electric generators play an important role in our life.

→ Because they produce electricity which is used in lighting houses and operating devices.

4. Cobalt and nickel are magnetic materials.

→ Because they are attracted to the magnet.

5. Gravity and magnetism differ from each other.

→ Because gravity is a pulling force only and attracts objects that have mass, Magnetism is a pulling or pushing force and attracts magnetic materials.

6. In a parallel circuit, when an electric lamp is turned off or removed, the other lamp remains lit.

→ Because in a parallel circuit, the electric current can flow through different branches.

7- Some electrical Circuits Contain electric resistors.

→ Because resistors slow the flow of electric current and to protect electric devices from damage. its Components.

8- Many devices such as Toaster, microwave and electric oven contain electric resistors.
"نفس الزجاجة الى فوق"

9- There is an antenna inside the Pacemaker.

→ To send information to the doctors to know how heart is working.

10- The thermostat has a role in electric applications.

→ Because it used to adjust the temperature inside devices such as refrigerator.

11- Parallel Connection is better Than series Connection.

→ Because in parallel circuit, if one light bulb burns out the other bulbs will work because the electric current flow in different branches but in series circuit, if one light bulb burns out, the other bulbs will not work because electric current flow in one path.

12- There is mutual effect between magnetism and electricity.

→ Because magnetism and electricity can work together and electric current can produce magnetic field also magnetic field can produce electric current.

⑥

What happen if

1- The distance between an object and Earth center increase.

→ The gravity force will decrease.

2- The distance between an object and Earth center decrease.

→ The gravity force will increase.

3- The mass of an object increase (relative to gravity).

→ The gravity force will increase.

4- The switch is closed in electric circuit.

→ The electric circuit will be closed and the electric current will flow through so the light bulb will work.

5- The switch is opened in electric circuit.

→ The electric circuit will be opened and the electric current can't flow through so the light bulb will not work.

6- A magnet is closed to plastic ruler.

→ It will not attract to the magnet because plastic is non-magnetic materials.

7- A glass rod is placed in electric circuit contain switch, battery and light bulb.

→ The light bulb will not work because glass is electric insulators which doesn't allow electric current to flow through.

(7)

8- A piece of aluminium is placed in circuit containing switch, battery and light bulb.

→ The light bulb will work because aluminium is an electric conductor which allows electric current to flow through.

9- Increasing the number of copper wire coil in an electromagnet.

→ The amount of electric current will increase.

10- Rubber thread is used instead of metal wire in an electric circuit.

→ The electric current can't flow through it because rubber is an electric insulator.

11- One of the components of an electric circuit is damaged or removed.

→ The electric current can't flow through and the device will not work.

12- Electric wires are covered with aluminium foil.

→ It will be a non-insulated wire because aluminium is an electric conductor which allows electric current to flow through.

13- Electric circuits in homes are connected in series.

→ If one light bulb burns out, the other bulbs will not work.

14- A person's heartbeat is irregular or slow.

→ This person must insert an artificial pacemaker in his chest to stimulate the heart to beat regularly.

⑧

"What the statment refer to"

1- space around magnet where its magnetic force appears.
(magnetic feild).

2- Materials are not attracted to the magnet (Non-magnetic material)

3- The force that pull objects down the center of Earth.
(Gravity).

4- Closed path of passing electric current (electric circuit).

5- Materials that allow electric charges to flow through them (electric conductors).

6- Materials that are attracted to the magnet.
(Magnetic materials).

7- The two factors that affect the force of gravity.
(Mass - distance).

8- The most common tool for opening and closing an electric circuit (Switch).

9- An electric circuit in which all components are connected in single path (series circuit).

10- Materials don't allow electrons to flow through them easily (Electric insulators).

11- A device that is inserted into the chest and stimulates the heart muscle to beat at regular intervals.
(Artificial pacemaker).

12- A device used to light houses and operate applications (generator).

13- A circuit that allow electric current to pass through it.
(Closed circuit).

14- A current produced by the flow of electrons in conductors (Electric current).

15- A device used to adjust the temperature in electric application (thermostat).

16- Force affected by two factors distance and mass (Gravity).

17- The area that surrounds magnet (Magnetic field).

18- A component in the circuit that reduces current flow. (electric resistors).

19- A device used to infer the passage of electric current in a circuit. (Galvanometer).

20- Materials that allow electric current to pass through. (electric conductors).

21- A type of electrical connection in which all components are connected in one path. (series circuit).

22- A type of electrical connection in which the lamps are connected to different branches. (parallel circuit).

أسئلة متنوعة

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1- What are the components of an electric circuit?

- Battery
- wire
- switch
- device (lamp).

2- What is the function of:-

- Battery:- is the source of an electric current.
- switch:- is used to open and close an electric circuit.
- Copper wire:- is used to allow electric current to flow through and connect all components of the circuit together.

3- What are the factors affect gravitational force of an object?

- Mass
- distance.

4- Compare the attraction and repulsion of magnetic material.

↳ Magnetic attraction

- is pulling force that attract magnetic materials.

Magnetic repulsion

- is pushing force that repel another magnet.

5- How does the size of magnet affect its ability to attract a piece of iron?

↳ When the size of the magnet increase, the ability to attract iron will increase.

6- How gravity is similar to magnetism

↳ Both of them:-

- are forces.
- Can't be seen
- Can affect on an object from a distance.

7- What is the importance of Thermostat?

↳ To adjust the temperature of devices (refrigerator).

8- How magnet can generate electricity

↳ Electricity can be generated when a magnet moves through a coil and we can detect it by using galvanometer.

9- What is the importance of pacemaker?

↳ It is used to stimulate heart to beat regularly.

10- Compare between electrically conductive materials and insulating materials.

↳ Electric conductors; - they allow electric current to flow through
ex:- iron - copper - aluminum.

↳ Electric insulators; - they don't allow electric current to flow through.
ex Wood - plastic - rubber.

11- Excretion process:-

it is a process of removing waste materials produced from cells.

12- Skin

it is the organ that help in excretion of sweat through pores.

13- Urination process:-

it is the process of expelling urine from the body.

14- Nephrons:-

they are microscopic filters inside the 2 kidneys that filter the blood from wastes.

15- Urea:-

it is the substance that formed due to breaking down of protein.

16- Diabetes disease:-

it is one of disorder of the endocrine system which people unable to make or use insulin, so sugar stay in the blood and causes many problems.

17- Insuline:-

it is hormone that secreted from pancreas to regulate the amount of sugar in the blood.

18- Insuline pump:-

it is a device connected to the body to help diabetics to control sugar level in the blood by injections of insulin.

Definitions & Concepts

1- Gravity:-

it is the force that attract all object to the earth center.

2- Magnetism:-

it is the force of magnet.

3- Magnetic field:-

it is an area around the magnet in which its magnetic force appears.

4- Generator:-

it is a device that used to generate electricity which can change mechanical energy into electric energy.

5- Electric current:-

it is the flow of electric charges in a closed path.

6- Electric circuit:-

it is the path for transmitting an electric current.

7- The switch:-

The most common tool to open and close the circuit.

8- Thermostat:-

it is automatic switch inside refrigerator to adjust temperature.

9- Electric conductors:-

they are materials that allow electric current to flow

10- Electric insulators:-

they are materials that don't allow electric current to flow.

11- Resistors:-

they are components of electric circuit to limit the flow of electricity in the circuit.

12- Series circuit:-

it is a type of electric circuit which all components connected in one path.

13- Parallel circuit:-

it is a type of electric circuit which the components connected in 2 or more different branches.

14- Galvanometer:-

it is a device used to detect the flow of small electric current.

15- Pacemaker:-

it is a device that operates with battery and inserted into the chest to simulate the heart to beat regularly.

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

